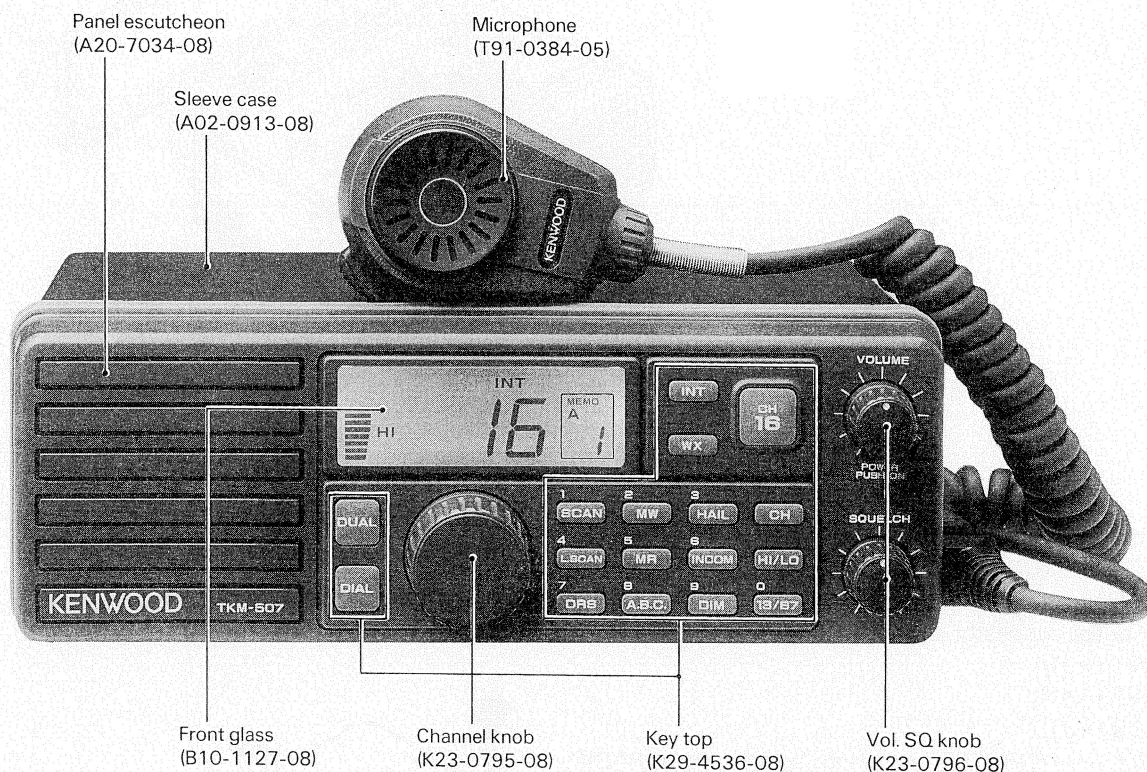




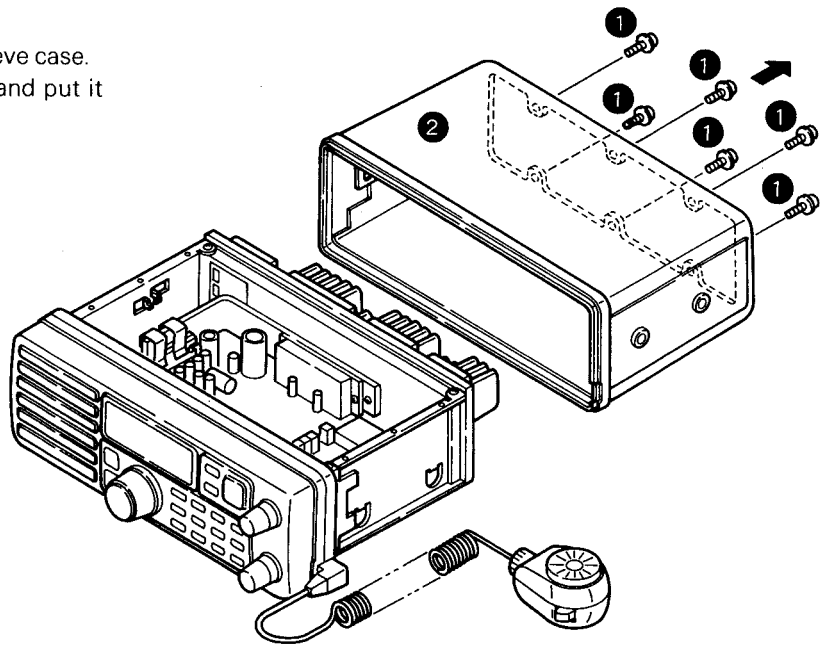
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INSTALLATION

Installation of MDR-1

- 1) Remove six screws (1) that fastens the sleeve case.
- 2) Pull out the sleeve case (2) from RADIO and put it into the rear surface.



- 3) Insert the connector-attached cable (W1, W2 and W3) of MDR-1 unit into the RADIO connector (J14, J15 and J16).

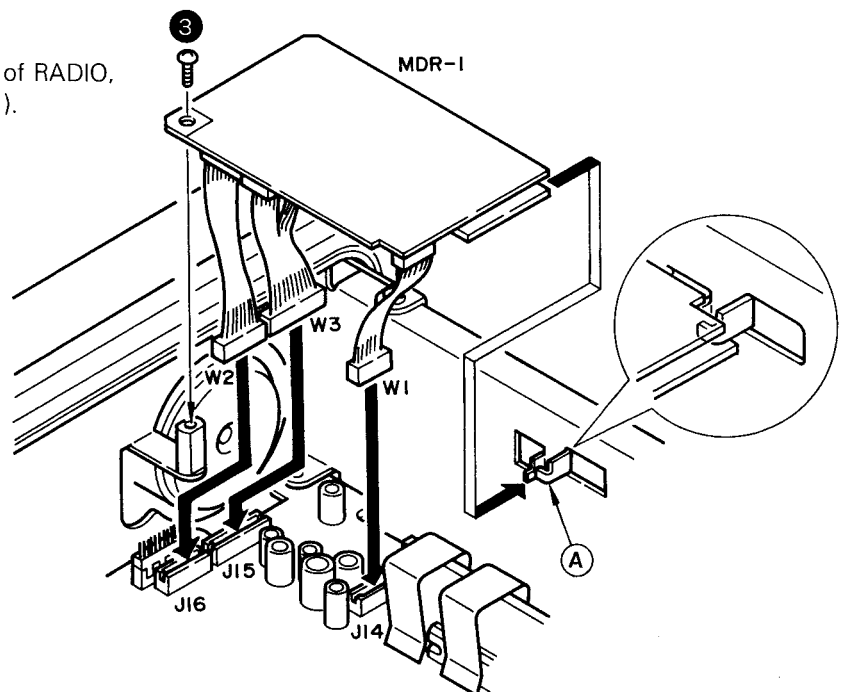
(For the connector, take care of the polarity.)

W1 → J14

W2 → J16

W3 → J15

- 4) Put the MDR-1 PC board into section A of RADIO, and tighten MDR-1 unit with one screw (3).



CIRCUIT DESCRIPTION

Circuit Configuration By Frequency

The receiving system utilizes double-conversion techniques. That is, an incoming signal is mixed down to the 1st intermediate frequency (IF) of 21.6MHz, using a 1st local oscillator frequency of from 134.4 to 141.975MHz. The 1st IF signal is then mixed with the 2nd local oscillator frequency of 21.145MHz to generate the 2nd IF of 455kHz. The transmitting system consists of a PLL circuit which allows direct modulation and direct frequency division. Signals from the PLL circuit are amplified by a linear amplifier for transmission.

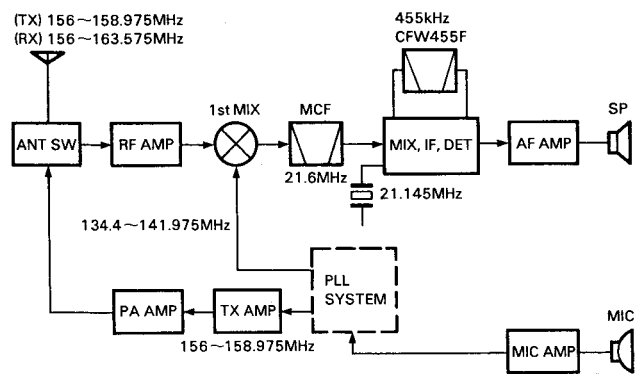


Fig. 1 Frequency configuration

Receiving System

• Overview

Incoming signals from the antenna pass through a low-pass filter in the final block of the transmitter system, and are switched to the front-end of the receiver system via a receive/transmit switching diode. The signals are then passed through an antenna matching coil, where the high-frequency components are amplified by a N-channel MOS FET. The signals are then fed into a three-stage bandpass filter that uses vari-cap tuning to reject unwanted signal components, and is fed to the 1st mixer. The 1st mixer uses the N-channel MOS FET that are used in the RF stage to obtain better two-signal characteristics. The 1st mixer mixes the signal with the 1st local oscillator frequency and converts it to the 1st IF

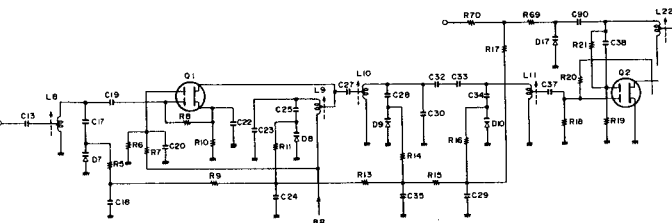


Fig. 2 Front-end section (vari-cap tuning)

(21.6MHz). The signal then passes through two monolithic crystal filters (MCFs) to remove unnecessary near-by frequency components. The signal from the MCFs is used as the 1st IF signal. The 1st IF signal is amplified and fed into IC1 in the narrow-FM IC (TK10485). The IF signal is then mixed with the 2nd local oscillator frequency of 21.145MHz to generate the 2nd IF of 455kHz. The 455kHz signal is then passed through a six element ceramic filter (CFW455E), and fed back into IC1 for additional amplification. The output signal from the IC1 is then fed into a power amplifier via the audio volume control for application to the speaker.

• S-meter circuit

S-meter control voltage from IC1 in the narrow-FM IC (TK1085) is fed into the control unit. The CPU converts the voltage from an analog to a digital signal in order to operate the LCD bar meter.

• Squelch circuit

The noise component extracted from the detector output is filtered to remove the second intermediate frequency component (455kHz), amplified twice, and is then fed to the rectifier. After rectification, the signal passes through the squelch control to the audio limiter circuit.

Item	Rating
Nominal center frequency (fo)	21.6 MHz
Pass bandwidth	±7.5 kHz or less at 3 dB
Attenuation bandwidth	±25 kHz or less at 40 dB
Ripple	1.0 dB or less
Insertion loss	2.0 dB or less
Guaranteed attenuation	65 dB or more within fo + 350 kHz ~ +1 MHz 80 dB or more within fo - 200 kHz ~ -1 MHz
Terminating impedance	1.5 kΩ/1.0 pF

Table 1 MCF (L71-0300-08) (TX-RX unit L15)

Item	Rating
Nominal center frequency	455 kHz ±1 kHz
6 dB bandwidth	±7.5 kHz or more (from 455 kHz)
50 dB bandwidth	±15 kHz or less (from 455 kHz)
Ripple (within ±4 kHz of 455 kHz)	3 dB or less
Insertion loss	6 dB or less
Guaranteed attenuation (within ±100 kHz of 455 kHz)	35 dB or more
I/O matching impedance	1.5 kΩ

Table 2 Ceramic filter CFW455E (L72-0316-05) (TX-RX unit L17)

CIRCUIT DESCRIPTION

Transmitting System

• Overview

The transmitter produces the target frequency thru the use of direct FM-modulation via a varactor diode.

• Modulation circuit

Audio signals from the microphone are applied to a three-stage operational amplifier which adds preemphasis, performs amplification and limiting, and includes a splatter filter to remove undesired high-frequency components. In the FM modulation circuit, the frequency of the VCO is directly modulated by a varactor diode.

• Pre-amplifier stage circuit

The output from the VCO enters the linear amplifier, which is capable of high-quality signal amplification because it operates entirely in linear mode. The APC (Automatic Power control) circuit can control the gain by changing the voltage at the second gate of the N-channel dual-gate MOS FET in the second stage.

• APC and SWR protection circuits

Fig. 3 shows the basic APC (Automatic Power Control) and SWR (Standing Wave Ratio) protection circuits. The SWR protection circuit incorporates a CM coupler that detects any reflected power caused by mismatching of the antenna. After detection and amplification, this circuit acts to lower the output control voltage, which protects the power module by reducing the gain. The automatic power control (APC) circuit incorporates a diode that is used to detect a portion of the output from the power module. The detected signal is amplified and is then used to control the power control voltage. The control voltage is inversely proportional to the output, so a constant output level is maintained.

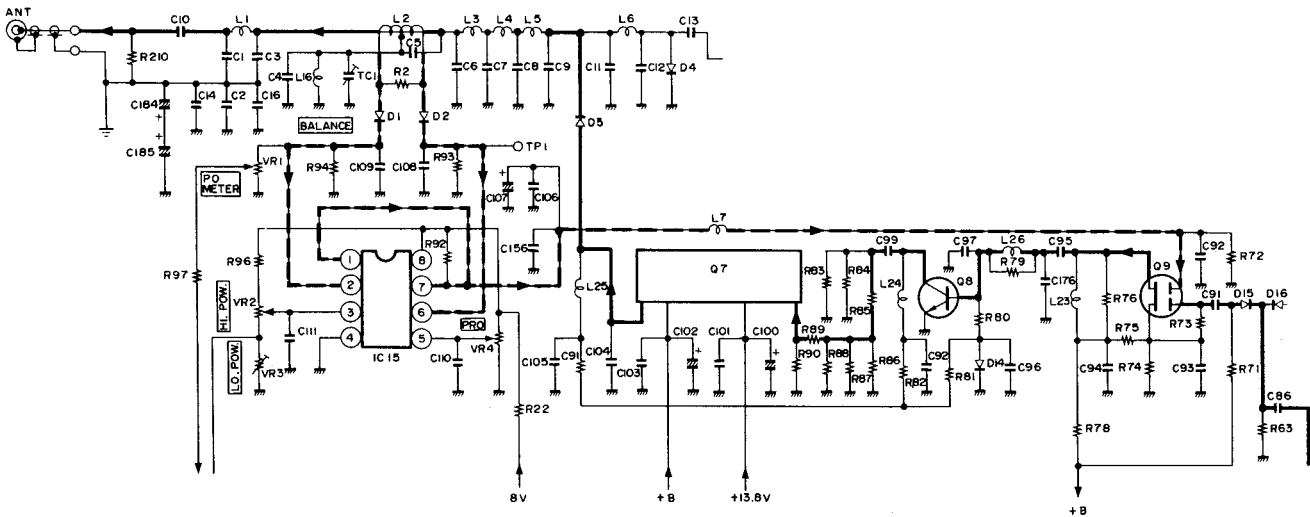


Fig. 3 Pre-amplifier stage, Power amplifier, and APC circuits

(Tc=25°C)

Item	Symbol	Tc (°C)	Condition	Rating	Unit
Operating voltage	Vcc	25		17	V
Current consumption	Icc	25		7	A
Input power	Pin	25	Z _G =50Ω	0.4	W
Output power	Po	25	Z _G =Z _L =50Ω	40	W
Case temperature (operating)	Tc (op)			-30~+110	°C
Storage temperature	Tstg			-40~+110	°C

Table 3 Power module M57710-A maximum rating

CIRCUIT DESCRIPTION

PLL Synthesizer Unit

The PLL of the TKM-507 consists of a reference oscillator using the PLL-IC and IC's internal oscillation circuit, a Low-pass filter, and a VCO having an independent transmit/receive channel.

The VCO used as a subunit is less influenced by the external unit with an improved frequency stability. The comparison frequency divides a reference oscillation frequency of 12.8MHz by 1024 to obtain a 12.5kHz frequency. The oscillation frequency of the transmit/receive VCO directly

oscillates the desired frequency. The oscillation frequency is then input through a two-stage buffer amplifier to the pulse swallow-type PLL-IC and sent to the frequency divider and phase comparator to lock the frequency. The PLL-IC (MB87014A) can set the reference and comparison frequency division ratios using external serial data. Two modulus prescalers 1/64 and 1/65 are incorporated in the PLL-IC to enable a one-chip pulse swallow-type PLL configuration.

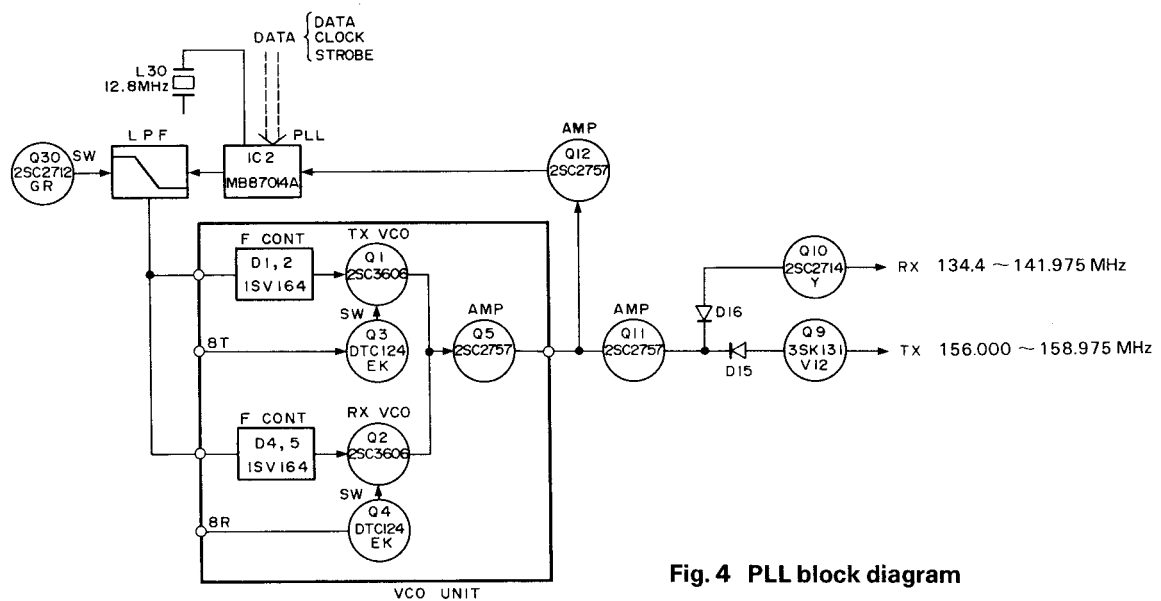


Fig. 4 PLL block diagram

Channel Data

The channel data is classified into reference data and comparison frequency division data. The reference data writes data when the power is switched on. The comparison frequency division data writes data during the power-on sequence, channel selection, and transmit/receive selection.

• Reference data

Number of reference frequency divisions
 $= 12.8 \text{ MHz} / \text{comparison frequency}$

LSB								MSB								
C	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0

Notes:

* Symbol C indicates a control bit. It rewrites reference data when 1, and rewrites comparison frequency division data when 0.

* Data is sent MSB through LSB and control bit sequence.

• Comparison frequency division data (for 16 channels)

Number of transmit frequency divisions
 $= 156.8000 \text{ MHz} / 12.5 \text{ kHz}$
 $= 12544$

LSB									MSB							
C	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0

Number of receive frequency divisions
 $= (156.8000 \text{ MHz} - 21.6 \text{ MHz}) / 12.5 \text{ kHz}$
 $= 10816$

LSB								MSB								
C	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0	0	0	0	0	0	0	1	0	0	1	0	1	0	1	0	0

CIRCUIT DESCRIPTION

Unlock Detector Circuit

When the PLL circuit is unlocked, pin 7 of the PLL-IC is set low. When Q28 goes on. Q13 goes on. When the transmit

voltage produced using Q15 and Q16 becomes 0 V, the transmission output stops to prevent emission of unwanted waves. (See Figure 5.)

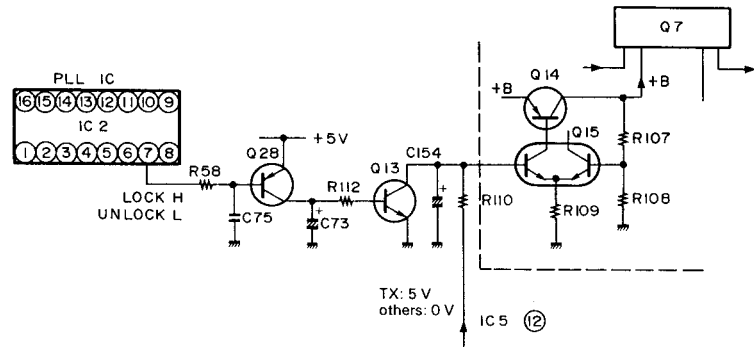


Fig. 5 Unlock detector circuit

DIGITAL CONTROL BLOCK

• Overview

The digital control block, consisting of a microcomputer IC1 (CPU) in the control unit, an input key, a display indicator, a reset circuit, peripheral circuitry, and a shift register in the TX-RX unit (eight-stage shift/store bus register), can control various functions using one CPU. Table Lists the pin functions of the CPU.

• Key, Rotary Encoder, and Other Digital Input Circuits

Figure 6 shows the input circuit. The key, rotary encoder, and PTT switch are directly entered to the CPU. The external ON-HOOK and interphone call terminals have a transistor buffer that protects the CPU and is activated when it is connected to ground.

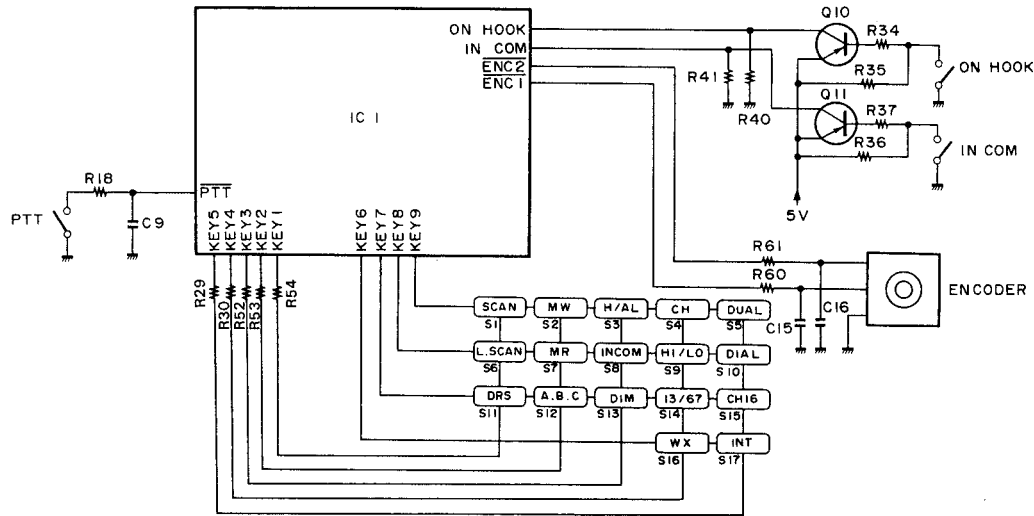


Fig. 6 Key and rotary encoder input circuit

CIRCUIT DESCRIPTION

PORT LABEL	PORT NAME	NO.	I/O	halt	Signal detail
LCD SEGMENT PORT	—	1	O	L	SEGMENT OUT PORT (NOT USE)
	19	2	O	L	1 FE D C B A 9 8 7 6 5 4 3 2 1 0 1E F E D C
	18	3	O	L	2 ⁰ L1 L4 L7 L — LO C — 1c — — 2c — DOMME A — 3c —
	17	4	O	L	2 ¹ L2 L5 — SCN D HI US 1a 1d 1f 2a 2d 2f WX 1 B 3a 3d 3f
LCD SEGMENT PORT	16	5	O	L	2 ² L3 L6 — DUA DR TX 1 1b 1e 1g 2b 2e 2g INT — C 3b 3e 3g
	15	6	O	L	L. SCAN USA C INT DOM WX
	14	7	O	L	DUAL D
	13	8	O	L	L7 — DRS 1a 1f 2a 2f A B C : — HI LO 1d 2d 3c : — TX 1b 1g 2b 2g 3a 3d 3f : — 1e 2e 3b 3e 3g L1 —
LCD COMMON PORT	COM0	21	O	L	COMMON OUT PORT
	COM1	22	O	L	COMMON OUT PORT
	COM2	23	O	L	COMMON OUT PORT
	COM3	24	O	L	COMMON OUT PORT (NOT USE)
LCD BIAS PORT	BIAS	25	V	OFF	LCD BIAS
	VLC0	26	V	OFF	LCD DRIVE VOLT PORT
	VLC1	27	VOL1	OFF	LCD DRIVE VOLT PORT
	VLC2	28	VOL1	OFF	LCD DRIVE VOLT PORT
PORT4	STB1	29	O	L	DATA STROBE PLCC (MSB) (LSB)
	STB2	30	O	L	DATA STROBE LACH2 TUNE3 2 1 TX ATT3 2 1 RX
	STB3	31	O	L	DATA STROBE LACH3 SP MD.MUT MIC MUTE INCTX RX INCC HA
	STB4	32	O	L	DATA STROBE LACH4 VOB VOA — HI/LO RD WR ACL STBY
PORT5	CK	34	O	L	CLOCK TO IC
	DT	35	O	L	DATA TO IC
	DIM1	36	O	L	DIMMER CHANGE 1 11: HIGHEST 01: LOWEST
	DIM2	37	O	L	DIMMER CHANGE 2 10: SECOND 00: OFF
PORT0 INPUT FIX	PS/OFF	38	I	I	POWER DOWN (5 V) 0: POWER OFF 1: POWER ON
	PTT	39	I*	I	PTT IN 0: PTT ON 1: PTT OFF
	DOM-MW	40	I*	I	DOM WRITE 0: WRITE MODE 1: NORMAL MODE
	KEY5	41	I*	I	KEY INPUT 5
PORT1 INPUT FIX	KEY4	42	I*	I*	KEY INPUT 4
	KEY3	43	I*	I*	KEY INPUT 3
	KEY2	44	I*	I*	KEY INPUT 2
	KEY1	45	I*	I*	KEY INPUT 1
PORT2	VERS A	46	I*	I	AREA SELECT A 0: EXP. INT. 1: NORMAL INT.
	VERS B	47	I*	I	AREA SELECT B 111: USA 100: BRITAIN 001: SCAN
	VERS C	48	I*	I	AREA SELECT C 110: CANADA 011: AUSTRA. 000: SELECT
	VERS D	49	I*	I	AREA SELECT D 101: BELGIUM 010: HOLLAND.
PORT3	KEY6	50	I/O	I*	KEY OUTPUT 3 → WX INT
	KEY7	51	I/O	I*	KEY OUTPUT 2 → DRS(7) ABC(8) DIM(9) 13/67(0) CH16
	KEY8	52	I/O	I*	KEY OUTPUT 1 → L.SCAN(4) MR(5) INCOM(6) HI/LO DIAL
	KEY9	53	I/O	I*	KEY OUTPUT 0 → SCAN(1) MW(2) HIAL(3) CH DUAL
PORT8	P0	54	I/O*	L	DRS CONTROL P0 1: NOP 5: ADLD2 9: REC
	P1	55	I/O*	L	DRS CONTROL P1 2: START 6: CNDT A: DTRD
	P2	56	I/O*	L	DRS CONTROL P2 3: STOP 7: LABEL B: DTWD
	P3	57	I/O*	L	DRS CONTROL P3 4: ADLD1 8: ADRP
A/D CONVERTER	S/RF	58	I	—	CARRY METER
	NSQ	59	I	—	NOISE SQL
	AN2~AN5	60 63	I	—	NOT USE
PORT6	BZ2	73	I/O*	I*	BUZZER LEVEL SELECT 1: INCOM 0 (*0*OUT): OTHER TONE
	BZ1	74	I/O*	I*	BUZZER TONE OUT
	ENC1	75	I*	I*	ENCODER UP 0: STEP 1: NORMAL
	ENC2	76	I*	I*	ENCODER DOWN 0: STEP 1: NORMAL
PORT7	INCOM	77	I	I	CALL EXIST 0: NOTHING 1: CALL EXIST
	ON HOOK	78	I	I	HOOK SW 0: OFF HOOK 1: ON HOOK
	VCK	79	I	I	DRS UNIT EXIST 0: NOTHING 1: DRS EXIST
	HOLD	80	I	I	BACK UP 0: NOTHING 1: HOT PASSED 3 SEC

* INTERNAL PULL UP RESISTOR

Table 4 75328GC-057-3B9 terminal functions (Control unit IC1)

CIRCUIT DESCRIPTION

• Reset and Backup Circuits

Figure 7 shows the reset and backup circuits. When the supply voltage becomes approximately 8.5 V, the reset circuit is activated and a negative-going pulse is input to the reset pin (pin 72 of the CPU). Pin 80 of the CPU is a hold pin. When pin 80 is low, the power is switched off. When it is high, the power is switched off momentarily. These operations are detected for 3 seconds by the time constant of R19 and C14. Pin 38 of the CPU is a PS/OFF pin. When pin 38 is high, the power is on. When it is low, the power is off.

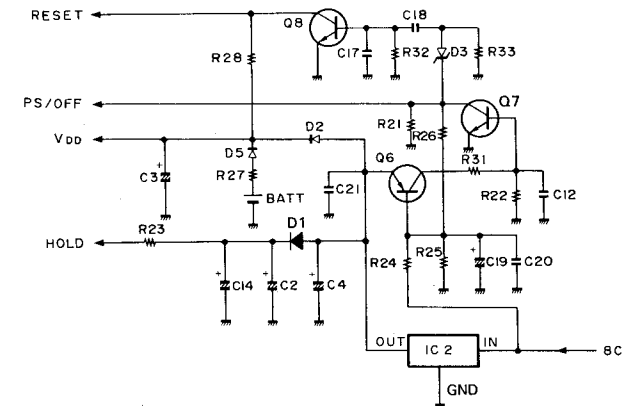


Fig. 7 Reset and back-up circuits

• S-Meter and RF Meter Input

The analog voltage of the S and RF meters is synthesized and input to the analog port at pin 58 of the CPU. The analog port output is analog-to-digital converted, then output to the display block.

• Noise Squelch Input

The analog voltage converted to a DC voltage using the noise detector circuit is input to the analog port at pin 59 of the CPU. The analog port output is then analog-to-digital converted to detect whether the squelch circuit is on or off.

• Lamp Circuit

When the outputs at pins 36 and 37 of the CPU are digital-to-analog converted and the voltage is amplified using Q1 and Q2, the lamp voltage can be changed and the lamp brightness changes.

• Shift Register Circuit

The shift register converts the CPU serial data into parallel data. This data contains transmit/receive, haller, inter-phone, electronic tuning voltage, and DRS (optional) signals. The clock and data are used in common. The strobe signal is independent for each shift register.

Figure 8 shows the data transfer format of the shift register (μ PD4094BG).

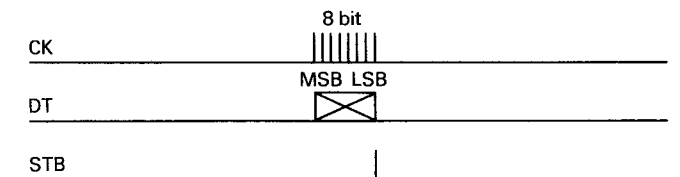


Fig. 8

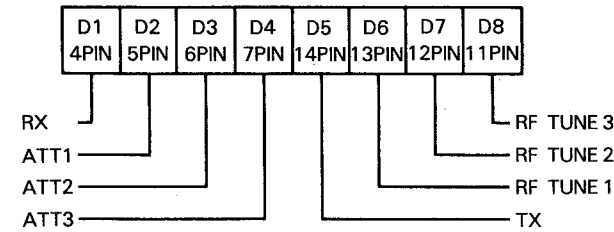
(1) STB1

STB1 sends the shift register data in a PLL-IC to the reference oscillation frequency and comparison frequency sides. Since the data was previously described in the item concerning the PLL, its explanation is omitted here.

CIRCUIT DESCRIPTION

(2) STB2

STB2 is a strobe signal of IC4.
The pin functions of IC4 are as follows:

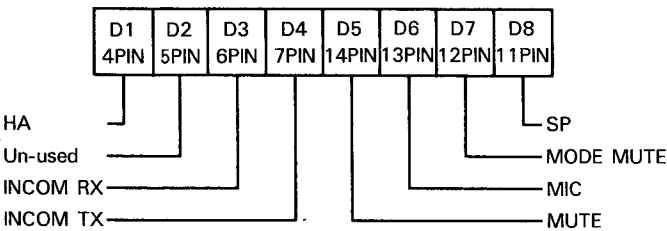


D6, D7, D8:
RF tuning D/A data.

Frequency	155 MHz region	156 MHz region	157 MHz region	158 MHz region	159 MHz region	160 MHz region	161 MHz region	162 MHz region
D6	H	L	H	L	H	L	H	L
D7	H	H	L	L	H	H	L	L
D8	H	H	H	H	L	L	L	L

(3) STB3

STB3 is a strobe signal of IC5.
The pin functions of IC5 are as follows:

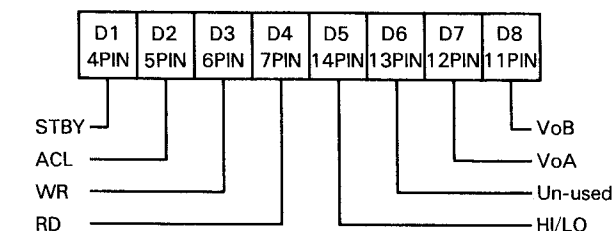


- D1: Analog switch ON/OFF data sent to hailer audio amplifier. High during hailer transmission.
- D2: Unused.
- D3: Interphone microphone amplifier analog switch and relay ON/OFF data. High during interphone reception.
- D4: Analog switch ON/OFF data sent to interphone audio amplifier. High during interphone transmission.
- D5: Squelch analog switch ON/OFF data. Low when squelch is on; High when it is off.
- D6: Microphone analog switch ON/OFF data. Goes high when microphone is used.
- D7: Transmitting microphone amplifier analog switch ON/OFF data. High during transmission.
- D8: Analog switch ON/OFF data sent to audio amplifier for internal speaker (including an external speaker.) High during DRS reproduction, interphone reception, and when squelch is off.

- D1: RX power ON/OFF switch. Goes high during reception.
- D2: Volume control when hailer and interphone are used. Goes high when the attenuator is set to maximum.
- D3: Volume control when hailer and interphone are used. Goes high when the attenuator is set to the 2nd stage.
- D4: Volume control when hailer and interphone are used. Goes high when the attenuator is set to the 3rd stage.
- D5: TX power ON/OFF switch. Goes high during transmission.

(4) STB4

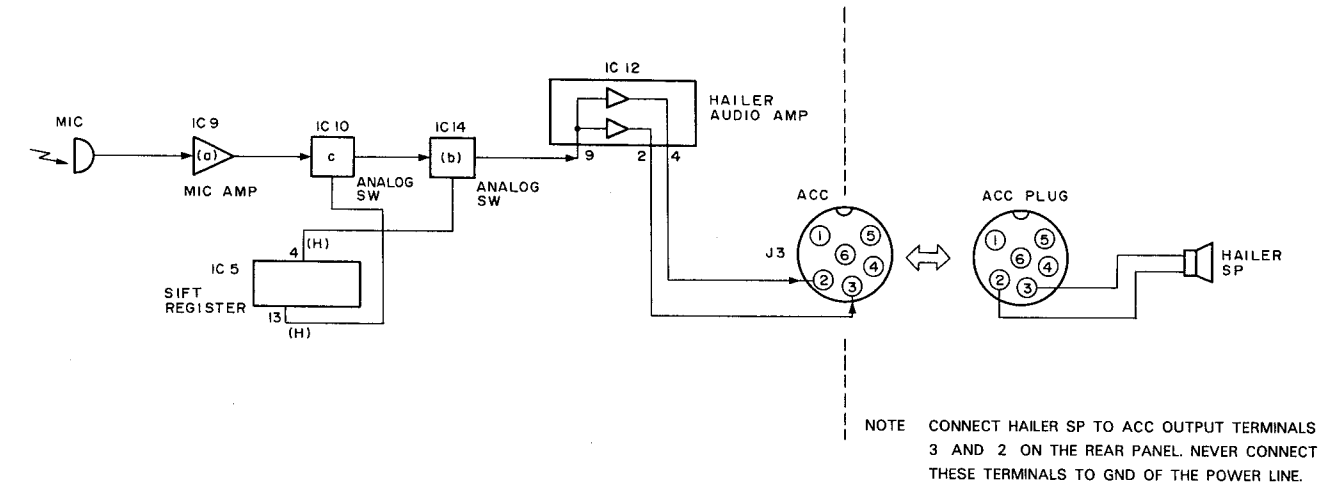
STB4 is a strobe signal of IC6.
The pin functions of IC6 are as follows:



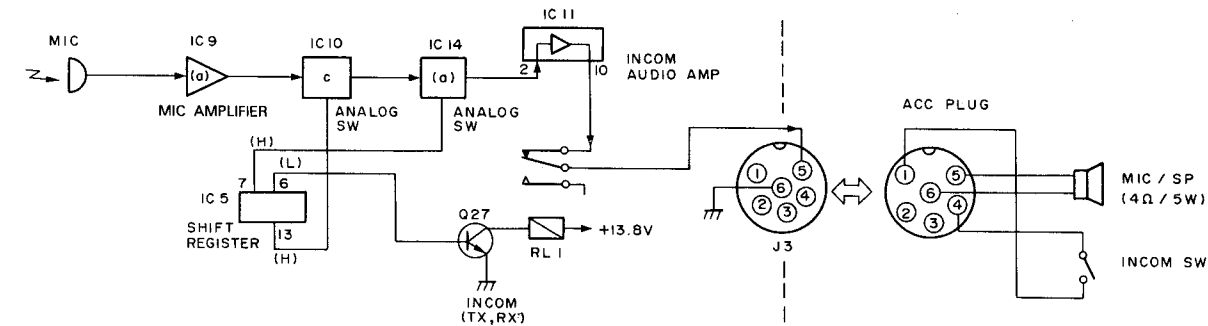
- Unused.
- D1, D2, D3, D4, D7, and D8:
Used for data sent to the CPU of the DRS unit.
- D5: Used to control transmission power. High during high power.
- D6: Unused.

CIRCUIT DESCRIPTION

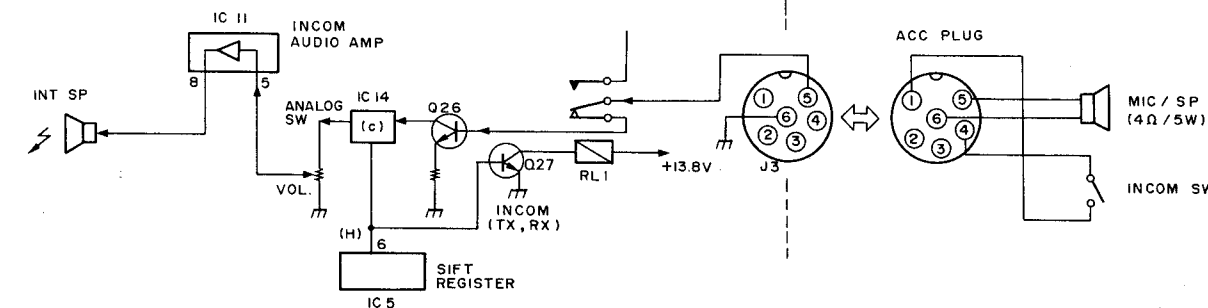
HAILER CIRCUITS



INTERCOM (TX) CIRCUITS



INTERCOM (RX) CIRCUITS



DESCRIPTION OF COMPONENTS

(W02-0869-08)

Component	Use/Function	Operation/Condition/Compatibility
Q1	High-frequency amplification	Operation at reception
Q2	First mixer	Convert receiving frequency to 21.6 MHz.
Q3	High-frequency amplification	Amplify the first IF frequency.
Q4	Noise amplification	
Q5	Level shift	Adjust to microcomputer input port.
Q6	Switching	HI power and LOW power selection. HI power when ON.
Q7	Power amplification	Power upgrade to specified power
Q8	Transmission driver (power amplification)	Upgrade the power module to the stipulated input power.
Q9	High-frequency amplification	Gain adjustment (power adjustment) with control from IC
Q10	High-frequency amplification	Amplify the signal issued from the first station to the mixed stipulated input.
Q11	Buffer amplification	Amplify VCO output to the stipulated input of Q9 and Q10.
Q12	High-frequency amplification	Amplify VCO output to the stipulated input of PLL IC.
Q13	PLL unlock control	On when PLL unlock
Q14, 15	11 V AVR	11 V at transmission
Q16	8T switching	ON at transmission
Q17	8T switching control	ON at transmission
Q18	8R switching	ON at reception
Q19	8R switching control	ON at reception
Q20	Auto tune control	Tuning control of reception BPF
Q21	Auto tune control	Tuning control of reception BPF
Q22	Auto tune control	Tuning control of reception BPF
Q23	Attenuator	Output control at HA and INCOM
Q24	Attenuator	Output control at HA and INCOM
Q25	Attenuator	Output control at HA and INCOM
Q26	Low-frequency amplification	Amplification at INCOM reception
Q27	Switching	INCOM transmission/reception switching relay control
Q28	PLL unlock DET	ON at PLL unlock
Q29	Reverse amplification	Shift register logical reversion IC6④
Q30	Switching	ON when PLL LPF constant selection transmission
D1	APC detection	
D2	APC detection	
D3	For electric discharge	For discharging S-meter line residual charge
D4, 5	Transmission/reception selection	ON at transmission
D6	For transient voltage prevention	
D7, 8, 9, 10	For reception BPF tuning	Vari-cap tuning
D11	Squelch noise rectification	
D12	For discharge	For discharging 8T line residual charge
D13	For discharge	For discharging 8R line residual charge
D14	Temperature compensation	Q8 (driver) temperature compensation
D15	VCO output selection	ON at transmission
D16	VCO output selection	ON at transmission
D17	For tuning	Vari-cap for tuning from first station
D18	Power supply reverse contact prevention	
D19	Reverse flow prevention	Prevention of reverse power generated at RL1

DESCRIPTION OF COMPONENTS

TX-RX Unit (W02-0869-08)

Component	Use/Function	Operation/Condition/Compatibility
IC1	Oscillation and mixer from second station IF amplification quadrature wave detection — Noise amplification	⑫ S meter output ⑭ 1st intermediate frequency signal input ⑪ Wave detection output ⑬ Noise amplification (first stage) output
IC2	PLL IC	Pulse swallow method PLL configuration
IC3	8 V AVR	
IC4	Shift register	Reception BPF, HA INCOM ATT, TX, RX control
IC5	Shift register	Transmission HI, LO, INCOM TX, RX, MODULE, RXMUTE, HA control
IC6	Shift register	For DRS unit control
IC7	5 V AVR	
IC8	Limit amplification	① Output ⑥ Input, HPF
IC9	Low-frequency amplification	Mic Amp ① Output ⑥ Input
IC11	AF amplification	Received demodulation signal amplification, INCOM transmission and reception
IC12	AF amplification	HA Amp
IC13	Low-frequency amplification	Demodulation signal amplification, LPF
IC10, 14	Analog switch	Control between ① and ② uses ⑬ Control between ③ and ④ uses ⑥ Control between ⑧ and ⑨ uses ⑥ Control between ⑩ to ⑪ uses ⑫
IC15	APC control	

VCO Unit (W02-0870-08)

Component	Use/Function	Operation/Condition/Compatibility
Q1	Transmission VCO	Operated as PLL VCO at transmission
Q2	Reception VCO	Operated as PLL VCO at reception
Q3	Transmission VCO switch	Transmission VCO operation at ON
Q4	Reception VCO switch	Reception VCO operation at ON
Q5	Buffer amplification	Transmission and reception VCO amplified to stipulated level
D1, 2	Vari-cap for transmission frequency control	
D3	Vari-cap for transmission modulation	FM modulation subjected to TX VCO
D4, 5	Vari-cap for reception frequency control	

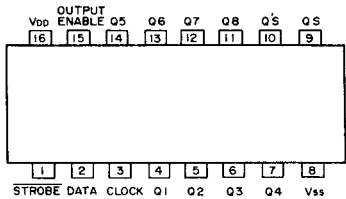
Control Unit (W02-087x-xx)

Component	Use/Function	Operation/Condition/Compatibility
IC1	Microcomputer	Total control mainly used for frequency control and LCD display
IC2	6 V AVR	
Q1, 2	Illumination control	4-stage selection according to 2-bit data from microcomputer
Q6, 7, 8	Reset	
Q10	Switching	ON at on hook
Q11	Switching	ON at INCOM call
D1	Counterflow prevention	
D2	Counterflow prevention	
D3	3.6 V Zener	For setting reset threshold voltage
D5	Counterflow prevention	To prevent counterflow to backup battery

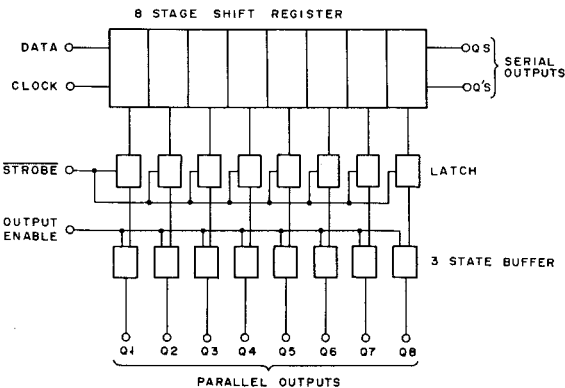
SEMICONDUCTOR DATA

μPD4094BG SHIFT REGISTER (TX-RX UNIT IC4)

• Terminal connection diagram



• Block diagram



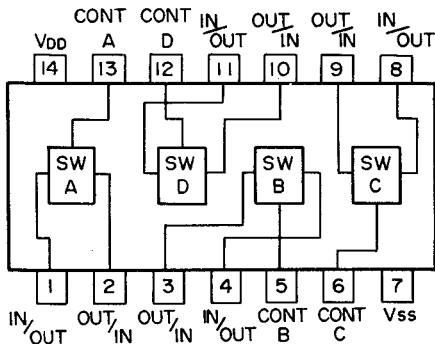
• Function table

CLOCK	OUT PUT ENABLE	STROBE	DATA	Parallel outputs		Serial outputs	
				Q ₁	Q _N	Q _S	Q _S '
	L	X	X	High Impedance	High Impedance	Q ₇	NO CHANGE
	L	X	X	High Impedance	High Impedance	NO CHANGE	Q ₇
	H	L	X	NO CHANGE	NO CHANGE	Q ₇	NO CHANGE
	H	H	L	L	Q _{N-1}	Q ₇	NO CHANGE
	H	H	H	H	Q _{N-1}	Q ₇	NO CHANGE
	H	H	H	NO CHANGE	NO CHANGE	NO CHANGE	Q ₇

H: High level
L: Low level
X: High or Low level

μPD4066BG QUAD BILATERAL SWITCH (TX-RX UNIT IC10)

• Terminal connection diagram



• Function table

CONTROL INPUT	SWITCH
H	ON
L	OFF

H: High level
L: Low level

LA4445 2 CHANNEL AF Power amplifier (TX-RX UNIT IC11)

Electrical characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
Quiescent current	I _Q			75	150	mA
Voltage gain	VG		49.5	51.5	53.5	dB
Output power	P _O	THD=10% Dual	5.0	5.5		W
Distortion	THD	P _O =1 W		0.15	1.0	%
Input resistance	r _i			30		kΩ
Noise output Voltage	V NO (1)	R _g =0		0.6	1.0	mV
	V NO (2)	R _g =10 kΩ		1.0	2.0	
Ripple rejection ratio	R _r	R _g =0, V _R =-200 mV, f _R =100 Hz		46		dB
Channel separation	ch sep	R _g =10 kΩ, V _O =0 dBm	45	55		dB

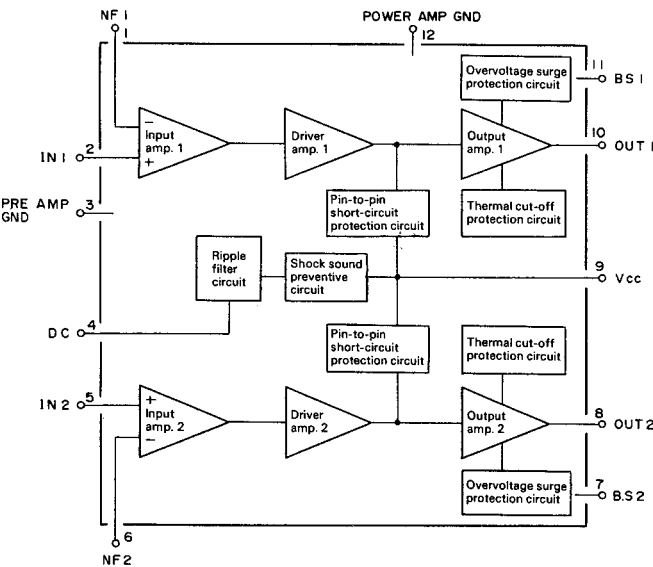
LA4461N AF Power amplifier (TX-RX UNIT IC12)

Electrical characteristics

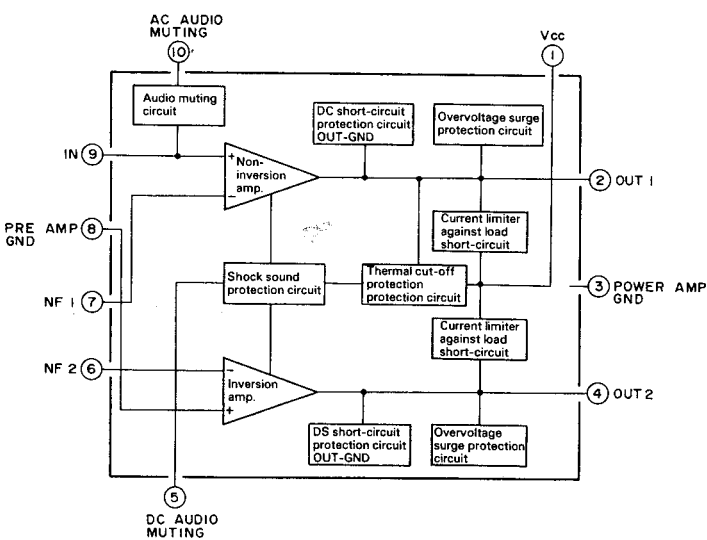
Item	Symbol	Condition	Min	Typ	Max	Unit
DC current	I _{cco}			65	120	mA
Voltage gain	VG		49	51	53	dB
Output power	P _O	THD=10%	10	12		W
Distortion	THD	P _O =1 W		0.1	1.0	%
Input resistance	r _i		21	30		kΩ
Noise output voltage	V NO (1)	R _g =0 (f=20 Hz~20 kHz. B.P.F)		0.4	1.0	mV
	V NO (2)	R _g =10 kΩ (f=20 Hz~20 kHz. B.P.F)		0.6	2.0	
Offset output voltage	V _{off}		-300		+300	mV

Block diagram

LA4445



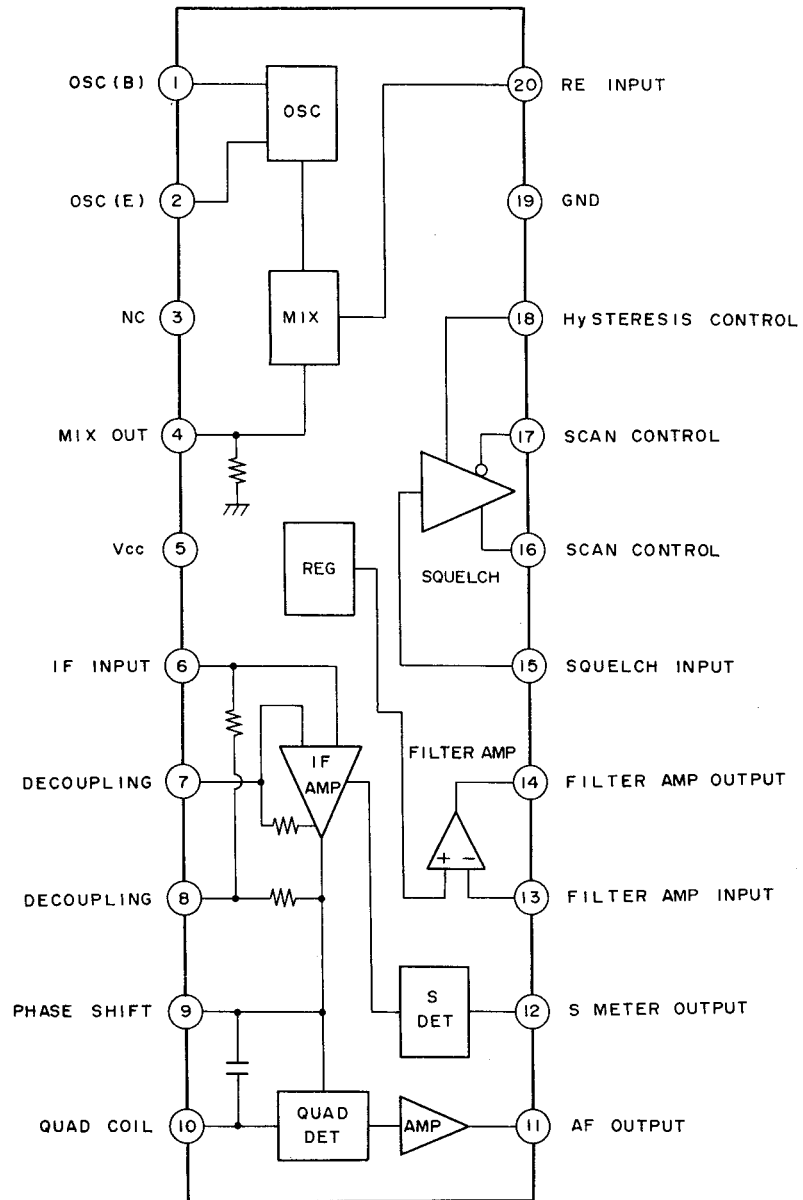
LA4461N



SEMICONDUCTOR DATA

TK10485MT1 IF system (TX-RX UNIT IC1)

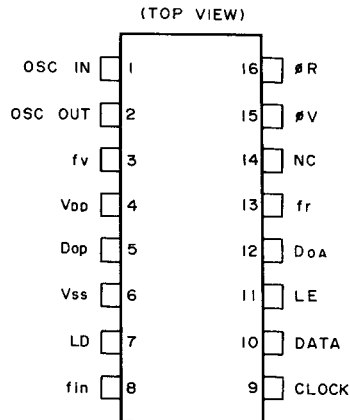
• Block diagram



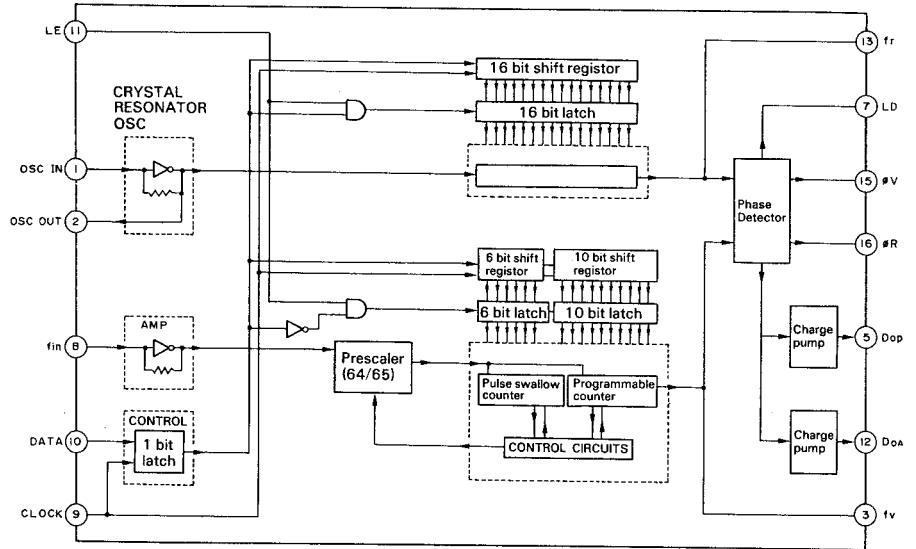
SEMICONDUCTOR DATA

MB87014A PLL system (TX-RX UNIT IC2)

• Terminal connection diagram



• Block diagram



• Pin description

Pin No.	Pin name	I/O	Function
1	OSC _{IN}	I	Crystal oscillator and capacitor connection pins. An external clock can be input to the OSC _{IN} pin. (OSC _{IN} : Oscillator input pin; OSC _{OUT} : Oscillator output pin)
2	OSC _{OUT}	O	
3	fv	O	A monitor pin for phase comparator input This signal corresponds to the relational divider output.
4	V _{DD}	—	A power pin
5	D _{OP}	O	A low-pass filter connection pin (passive). Reference divider output fr and relational divider output fv are in the following relation: ○ fr > fv: Drive mode (D _{OP} : High level) ○ fr = fv: High impedance ○ fr < fv: Sink mode (D _{OP} : Low level)
6	V _{SS}	—	A ground pin
7	LD	O	A phase comparator output pin. The high level pulse is output in the locked mode. The negative pulse is output in the unlocked mode.
8	fin	I	A prescaler input pin. Input a signal through AC coupling.
9	Clock	I	A shift register clock input pin. The data is read at the leading edge of a clock pulse.
10	Data	I	A shift register serial data input pin. The last bit of data is a control bit. For details, see the section "Functions".
11	LE	I	A load enable signal input pin. When LE is high, this signal, in combination with the control bit of data, sends the data in the shift register to the latch on the reference or comparison side.
12	D _{OA}	O	A low-pass filter connection pin (active). Reference divider output fr and relational divider output fv are in the following relation: ○ fr > fv: Sink mode (D _{OA} : Low level) ○ fr = fv: High impedance ○ fr < fv: Drive mode (D _{OA} : High level)
13	fr	O	A monitor pin for phase comparator input This signal corresponds to the reference divider output.
14	NC	—	An unused pin
15	φV	O	A low-pass filter connection pin (differential filter). Reference divider output fr and relational divider output fv are in the following relation: ○ fr > fv: φV = High level, φR = Low level ○ fr = fv: φV = High level, φR = High level ○ fr < fv: φV = Low level, φR = High level
16	φR	O	

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TKM-507						
1	6D	*	A20-7034-08	PANEL ESCUTCHEON	K MPTX	
2	5C	*	A22-0766-08	SUB PANEL		
3	2B	*	A02-0913-08	SLEEVE CASE		
4	6D	*	B10-1127-08	FRONT GLASS		
5	2A	*	B40-3995-08	FCC PLATE		
-		*	B50-8309-08	INSTRUCTION MANUAL		
-		*	B46-0420-00	WARRANTY CARD		
-		*	B58-0694-08	INSTALLATION MANUAL		
6	1A	*	E30-2175-08	DC CORD ASSY		
7	1A	*	E30-2174-08	ANT CABLE ASSY		
8	2A	*	E23-0643-08	TERMINAL		
9	4D	*	E30-2173-08	CURLCORD ASSY		
-			E30-2053-05	DC CORD ASSY(WITH FUSE 20A)		
-			E07-0651-05	ACCY PLUG		
-		*	E30-2195-08	MAINTENANCE CABLE(11P)		
-		*	E30-2197-08	ON HOOK CORD		
-		*	E31-6075-08	CONNECTING WIRE(2P)		
-		*	E31-6127-08	MAINTENANCE CABLE(7P)		
10	2A	*	F11-1151-08	SHIELDING COVER(POWER MODULE)		
11	2A	*	F29-0440-08	INSULATING WASHER		
12	1A	*	F01-0973-08	HEAT SINK		
-			F05-7025-08	FUSE(7A)		
-			F05-2036-05	FUSE(20A)		
13	6D	*	G53-0575-08	CHANNEL RUBBER		
14	6D	*	G53-0576-08	VOL,SQL RUBBER		
15	5C	*	G10-0688-08	FELT(SP)		
16	6C	*	G53-0577-08	SPACER		
17	5C	*	G53-0580-08	SP RUBBER		
18	4C	*	G53-0571-08	PACKING(FRONT)		
19	2A	*	G53-0574-08	ACCY CAP		
20	1A	*	G53-0573-08	TERMINAL CAP		
21	1A	*	G53-0572-08	PACKING(REAR)		
22	4D	*	G53-0581-08	MIC RUBBER		
-		*	H01-8288-08	ITEM CARTON BOX		
-		*	H10-2678-08	POLYSTYREN FOAMED FIXTURE		
-		*	H25-0731-08	POLYSTYREN BAG(330X460)		
-		*	H13-0839-08	PROTECTION PLATE		
-		*	H11-0831-08	POLYSTYREN PLATE		
-		*	H25-0732-08	PROTECTION BAG(65X210)		
-		*	H25-0730-08	PROTECTION BAG(90X250)		
23	3B	*	J32-0912-08	BOSS(PRU)		
24	3B	*	J21-4284-08	LEAF SPRING		
25	2A, 1A	*	J11-0413-08	CORD CLAMP		
26	1B, 2B	*	J32-0913-08	STUD		
-		*	J29-0442-08	BRACKET		
-		*	J29-0444-08	MIC HOOK		
27	6D	*	K23-0795-08	CHANNEL KNOB		
28	6D	*	K23-0796-08	VOL, SQ KNOB		
29	5D	*	K29-4536-08	KEY TOP		
30	6D	*	N14-0543-08	NUT(CHANNEL)		
31	6D		N14-0536-08	NUT(VOL)		

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32 A B C 33 D E 34 F - - - - -	6D 2B 1A	* *	N19-0644-08 N35-2606-41 N87-2604-41 N30-2605-41 N15-3010-41 N09-0626-04 N30-3006-41 N14-0536-08 N09-2090-08 N08-0520-08 N09-2039-05 N09-2047-08 N09-2091-08 N14-0539-08 N15-1050-60 N16-1050-60	FLAT WASHER(VOL SPACER) BINDING HEAD MACHINE SCREW BRAZIER HEAD TAPTITE SCREW PAN HEAD MACHINE SCREW(M2.6X5) FLAT WASHER Ø3 SEMUS(MACHINE SCREW) M3X10 PAN HEAD MACHINE SCREW M3X6 ANTENNA COVER MACHINE SCREW(SEMUS) BOLT SEMUS(MACHINE SCREW) M5X16 HEXAGON NUT M5X20 SEMUS(MACHNE SCREW) M4X20 NUT M5 FLAT WASHER Ø5 SPRING WASHER Ø5		
35 36	5C 5D	* *	T07-0872-08 T91-0384-05	SPEAKER MICROPHONE		
37 38 39 39 39	3B 2A 4C 4C 4C	* * * * *	W02-0869-08 W02-0870-08 W02-0871-08 W02-0874-08 W02-0875-08	TX-RX UNIT VCO UNIT CONTROL UNIT CONTROL UNIT CONTROL UNIT	KM P X	
39	4C	*	W02-0876-08	CONTROL UNIT	T	
TX-RX UNIT (W02-0869-08)						
C1 C2 C3 C4 C5		* *	CC73FCH1H150J CK73FB1H222K CC73FCH1H120J CC73FCH1H180K CC73FCH1H010D	CHIP C 15PF J CHIP C 2200PF K CHIP C 12PF J CHIP C 18PF K CHIP C 1.0PF D		
C6 C7 ,8 C9 C10 C11		* *	CC73FCH1H180K CM73F2H330J CC73FCH1H180K CK45B2H102K CC73FCH1H060D	CHIP C 18PF K CHIP C 33PF J CHIP C 18PF K CERAMIC 1000PF K CHIP C 6.0PF D		
C12 C13 C14 C16 C17			CC73FCH1H070D CC73FCH1H090D CK73FB1H102K CK73FB1H104K CC73FCH1H080D	CHIP C 7.0PF D CHIP C 9.0PF D CHIP C 1000PF K CHIP C 0.10UF K CHIP C 8.0PF D		
C18 C19 C20 C21 C22			CK73FB1H222K CC73FCH1H040D CK73FB1H222K CK73FB1H104K CK73FB1H222K	CHIP C 2200PF K CHIP C 4.0PF D CHIP C 2200PF K CHIP C 0.10UF K CHIP C 2200PF K		
C23 C24 C25 C26 C27		*	CC73FCH1H020D CK73FB1H222K CC73FCH1H070D CK73FB1H222K CC73FCH1H030D	CHIP C 2.0PF D CHIP C 2200PF K CHIP C 7.0PF D CHIP C 2200PF K CHIP C 3.0PF D		
C28 C29 C30 ,31			CC73FCH1H070D CK73FB1H222K CC73FCH1H020D	CHIP C 7.0PF D CHIP C 2200PF K CHIP C 2.0PF D		

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C32		*	CC73FCH1H010D	CHIP C 1.0PF D		
C33		*	CC73FCH1H0R5D	CHIP C 0.5PF D		
C34		*	CC73FUJ1H070D	CHIP C 7.0PF D		
C35 ,36			CK73FB1H222K	CHIP C 2200PF K		
C37 ,38			CC73FCH1H050D	CHIP C 5.0PF D		
C39			CK73FB1H103K	CHIP C 0.010UF K		
C40			CK73FB1H102K	CHIP C 1000PF K		
C41			CC73FCH1H070D	CHIP C 7.0PF D		
C42 -44			CK73FB1H103K	CHIP C 0.010UF K		
C45		*	CC73FCH1H470K	CHIP C 47PF K		
C46		*	CC73FCH1H220K	CHIP C 22PF K		
C47		*	CC73FCH1H121K	CHIP C 120PF K		
C48			CK73FB1H102K	CHIP C 1000PF K		
C49			CK73FB1H104K	CHIP C 0.10UF K		
C50			CS15B1A100M	TANTAL 10UF 10WV		
C51 ,52			CK73FB1H104K	CHIP C 0.10UF K		
C53			CE04EW1H010M	ELECTRO 1.0UF 50WV		
C54 -58			CK73FB1H472K	CHIP C 4700PF K		
C59			CC73FCH1H100J	CHIP C 10PF J		
C60			CK73FB1H103K	CHIP C 0.010UF K		
C61			CK73FB1H104K	CHIP C 0.10UF K		
C62		*	CC73FCH1H221K	CHIP C 220PF K		
C63			CK73FB1H103K	CHIP C 0.010UF K		
C64			CK73FB1H222K	CHIP C 2200PF K		
C65			CE04EW1A471M	ELECTRO 470UF 10WV		
C66 ,67			CK73FB1H222K	CHIP C 2200PF K		
C68			CK73FB1H102K	CHIP C 1000PF K		
C69			CK73FB1H222K	CHIP C 2200PF K		
C70		*	CC73FCH1H220K	CHIP C 22PF K		
C71 ,72			CK73FB1H222K	CHIP C 2200PF K		
C73			CE04EW1HR22M	ELECTRO 0.22UF 50WV		
C74			CK73FB1H102K	CHIP C 1000PF K		
C75			CK73FB1H103K	CHIP C 0.010UF K		
C76			CK73FB1H102K	CHIP C 1000PF K		
C77			CK73FB1H103K	CHIP C 0.010UF K		
C78		*	CC73FCH1H560K	CHIP C 56PF K		
C79		*	CC73FCH1H220K	CHIP C 22PF K		
C80			CK73FB1H102K	CHIP C 1000PF K		
C81			CS15E1C2R2M	TANTAL 2.2UF 16WV		
C82			CK73FB1H333K	CHIP C 0.033UF K		
C83			CQ92M1H683K	MYLAR 0.068UF K		
C84			C92-0004-05	CHIP-TAN 1UF 16WV		
C85			CQ92M1H223K	MYLAR 0.022UF K		
C86			CK73FB1H102K	CHIP C 1000PF K		
C87			CC73FCH1H100J	CHIP C 10PF J		
C88 ,89			CK73FB1H222K	CHIP C 2200PF K		
C90			CC73FCH1H100J	CHIP C 10PF J		
C91 ,92			CK73FB1H102K	CHIP C 1000PF K		
C93 ,94			CK73FB1H222K	CHIP C 2200PF K		
C95			CC73FCH1H020D	CHIP C 2.0PF D		
C96			CK73FB1H222K	CHIP C 2200PF K		
C97			CC73FCH1H100J	CHIP C 10PF J		
C98			CK73FB1H222K	CHIP C 2200PF K		
C99		*	CC73FCH1H470K	CHIP C 47PF K		
C100			CE04EW1C100M	ELECTRO 10UF 16WV		

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C101			CK73FB1H222K	CHIP C 2200PF K		
C102			CE04EW1C100M	ELECTRØ 10UF 16WV		
C103			CK73FB1H222K	CHIP C 2200PF K		
C104		*	CC73FCH1H220K	CHIP C 22PF K		
C105			CK73FB1H222K	CHIP C 2200PF K		
C106			CK73FB1H102K	CHIP C 1000PF K		
C107			CS15E1A100M	TANTAL 10UF 10WV		
C108-109			CC73FCH1H101K	CHIP C 100PF K		
C110, 111			CK73FB1H103K	CHIP C 0.010UF K		
C112			CE04EW1C222M	ELECTRØ 2200UF 16WV		
C113			CE04EW1C101M	ELECTRØ 100UF 16WV		
C114			CK73FB1H103K	CHIP C 0.010UF K		
C115			CK73FB1H393K	CHIP C 0.039UF K		
C116			CE04EW1C100M	ELECTRØ 10UF 16WV		
C118			CK73FB1H104K	CHIP C 0.10UF K		
C119		*	CC73FCH1H331K	CHIP C 330PF K		
C120		*	CC73FCH1H470K	CHIP C 47PF K		
C121			CK73FB1H122K	CHIP C 1200PF K		
C122			CK73FB1H104K	CHIP C 0.10UF K		
C123-125			CK73FB1H392K	CHIP C 3900PF K		
C126			CE04EW1C101M	ELECTRØ 100UF 16WV		
C127			CE04EW1H2R2M	ELECTRØ 2.2UF 50WV		
C128			CK73FB1H104K	CHIP C 0.10UF K		
C129			CK73FB1H102K	CHIP C 1000PF K		
C130			CE04EW1A470M	ELECTRØ 47UF 10WV		
C131			CK73FB1H103K	CHIP C 0.010UF K		
C132			CK73FB1H104K	CHIP C 0.10UF K		
C133			CE04EW1C221M	ELECTRØ 220UF 16WV		
C134		*	CC73FCH1H331K	CHIP C 330PF K		
C135			CE04EW1A470M	ELECTRØ 47UF 10WV		
C136			CE04EW1C101M	ELECTRØ 100UF 16WV		
C137, 138			CE04EW1C102M	ELECTRØ 1000UF 16WV		
C139			CE04EW1C101M	ELECTRØ 100UF 16WV		
C140, 141			CQ92M1H104K	MYLAR 0.10UF K		
C142			CE04EW1HR47M	ELECTRØ 0.47UF 50WV		
C143			CK73FB1H393K	CHIP C 0.039UF K		
C144			CK73FB1H102K	CHIP C 1000PF K		
C145			CK73FB1H104K	CHIP C 0.10UF K		
C146			CK73FB1H103K	CHIP C 0.010UF K		
C147, 148			CE04EW1A470M	ELECTRØ 47UF 10WV		
C149			CK73FB1H103K	CHIP C 0.010UF K		
C150, 151			CQ92M1H333K	MYLAR 0.033UF K		
C152			CE04EW1HR47M	ELECTRØ 0.47UF 50WV		
C153			CK73FB1H393K	CHIP C 0.039UF K		
C154			CE04EW1H4R7M	ELECTRØ 4.7UF 50WV		
C155			CE04EW1H010M	ELECTRØ 1.0UF 50WV		
C156			CK73FB1H102K	CHIP C 1000PF K		
C157			CK73FB1H103K	CHIP C 0.010UF K		
C158			CK73FB1H104K	CHIP C 0.10UF K		
C159		*	CC73FCH1H680K	CHIP C 68PF K		
C160			CE04EW1C100M	ELECTRØ 10UF 16WV		
C161			CK73FB1H222K	CHIP C 2200PF K		
C162			CE04EW1A471M	ELECTRØ 470UF 10WV		
C163			CE04EW1C101M	ELECTRØ 100UF 16WV		
C164			CK73FB1H104K	CHIP C 0.10UF K		

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L5		*	L34-1291-08	COIL		
L6		*	L34-1292-08	COIL		
L7		*	L33-0731-08	CHIP COIL(1UH)		
L8 -11			L34-4039-15	RF COIL		
L12 ,13			L34-4096-08	IF 21.6MHZ		
L14		*	L33-0732-08	CHIP COIL 10UH		
L15		*	L71-0300-08	MCF 21.6MHZ		
L16		*	L33-0734-08	CHIP COIL 22UH		
L17			L72-0316-05	CERAMIC FILTER(CFW-455E)		
L18			L30-0503-05	COIL		
L19 -21			L40-1021-41	CHIP COIL 1MH		
L22			L34-4039-15	RF COIL		
L23			L34-0908-05	COIL		
L24			L34-0894-05	COIL		
L25			L34-0908-05	COIL		
L26			L34-0894-05	COIL		
L27		*	L33-0733-08	CHIP COIL		
L30		*	L77-1424-08	CRYSTAL RESONATOR(12.8MHZ)		
L31		*	L77-1425-08	CRYSTAL RESONATOR(21.145MHZ)		
R2			RK73FB2A680J	CHIP R 68 J 1/10W		
R3 ,4			RK73FB2A822J	CHIP R 8.2K J 1/10W		
R5			RK73FB2A683J	CHIP R 68K J 1/10W		
R6			RK73FB2A473J	CHIP R 47K J 1/10W		
R7			RK73FB2A393J	CHIP R 39K J 1/10W		
R8 ,9			RK73FB2A683J	CHIP R 68K J 1/10W		
R10			RK73FB2A330J	CHIP R 33 J 1/10W		
R11			RK73FB2A683J	CHIP R 68K J 1/10W		
R12			RK73FB2A100J	CHIP R 10 J 1/10W		
R13 -15			RK73FB2A683J	CHIP R 68K J 1/10W		
R16 -18			RK73FB2A104J	CHIP R 100K J 1/10W		
R19			RK73FB2A822J	CHIP R 8.2K J 1/10W		
R20			RK73FB2A155J	CHIP R 1.5M J 1/10W		
R21			RK73FB2A223J	CHIP R 22K J 1/10W		
R22			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R23			RK73FB2A100J	CHIP R 10 J 1/10W		
R24			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R25			RK73FB2A182J	CHIP R 1.8K J 1/10W		
R26			RK73FB2A822J	CHIP R 8.2K J 1/10W		
R27			RK73FB2A473J	CHIP R 47K J 1/10W		
R28			RK73FB2A181J	CHIP R 180 J 1/10W		
R29			RK73FB2A101J	CHIP R 100 J 1/10W		
R30			RK73FB2A221J	CHIP R 220 J 1/10W		
R31			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R32			RK73FB2A273J	CHIP R 27K J 1/10W		
R33			RK73FB2A822J	CHIP R 8.2K J 1/10W		
R34			RK73FB2A393J	CHIP R 39K J 1/10W		
R35			RK73FB2A105J	CHIP R 1.0M J 1/10W		
R36 -38			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R39.			RK73FB2A104J	CHIP R 100K J 1/10W		
R40			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R41			RK73FB2A334J	CHIP R 330K J 1/10W		
R42			RK73FB2A104J	CHIP R 100K J 1/10W		
R43			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R44			RK73FB2A822J	CHIP R 8.2K J 1/10W		

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C165			CE04EW1C101M	ELECTRØ 100UF 16WV		
C166			CE04EW1H010M	ELECTRØ 1.0UF 50WV		
C167			CK73FB1H471K	CHIP C 470PF K		
C168			CK73FB1H222K	CHIP C 2200PF K		
C169		*	CC73FCH1H220K	CHIP C 22PF K		
C170			CE04EW1C101M	ELECTRØ 100UF 16WV		
C171		*	CC73FCH1H220K	CHIP C 22PF K		
C172			CE04EW1C221M	ELECTRØ 220UF 16WV		
C173			CE04EW1C100M	ELECTRØ 10UF 16WV		
C174			CK73FB1H103K	CHIP C 0.010UF K		
C175			CK73FB1H472K	CHIP C 4700PF K		
C176		*	CC73FCH1H220K	CHIP C 22PF K		
C177-179			CK73FB1H102K	CHIP C 1000PF K		
C180,181			CK45B2H102K	CERAMIC 1000PF K		
C182			CE04EW1C102M	ELECTRØ 1000UF 16WV		
C183			CK73FB1H103K	CHIP C 0.010UF K		
C184,185			CE04EW1C101M	ELECTRØ 100UF 16WV		
C186,187		*	C91-1106-08	0.001UF		
C188			CQ92M1H473K	MYLAR 0.047UF K		
C189			CC73FCH1H150J	CHIP C 15PF J		
C190			CC73FCH1H050D	CHIP C 5.0PF D		
C191			CS15E1A6R8M	TANTAL 6.8UF 10WV		
C192		*	CC73FCH1H220K	CHIP C 22PF K		
C193			CK73FB1H103K	CHIP C 0.010UF K		
C194			CK73FB1H102K	CHIP C 1000PF K		
TC1			C05-0349-05	TRIMMER 10PF		
TC3			C05-0350-05	TRIMMER 20PF		
		*	E31-6076-08	CONNECTING WIRE(2P+3P)		
		*	E31-6077-08	CONNECTING WIRE(6P)		
J1 ,2		*	E11-0441-08	JACK(EXT SP,HØØK)		
J3		*	E06-0659-08	6P METAL CONNECTØR		
J4		*	E40-5353-08	PIN CONNECTØR(2P)		
J5			E40-3237-05	PIN CONNECTØR(2P)		
J6			E40-3238-05	PIN CONNECTØR(3P)		
J7		*	E40-5352-08	PIN CONNECTØR(2P)		
J8			E40-3237-05	PIN CONNECTØR(2P)		
J9			E40-3238-05	PIN CONNECTØR(3P)		
J10		*	E40-5354-08	PIN CONNECTØR(3P)		
J11			E40-3241-05	PIN CONNECTØR(6P)		
J12			E40-3240-05	PIN CONNECTØR(5P)		
J13		*	E40-5355-08	PIN CONNECTØR(11P)		
J14			E40-5182-05	PIN CONNECTØR(5P)		
J15			E40-5187-05	PIN CONNECTØR(10P)		
J16			E40-5185-05	PIN CONNECTØR(8P)		
J17			E40-3238-05	PIN CONNECTØR(3P)		
TP1			E23-0512-05	TEST PIN(1P)		
TP3 ,4			E23-0512-05	TEST PIN(1P)		
		*	F10-1421-08	SHILDING PLATE		
		*	F10-1429-08	SHILDING CASE		
			F11-0836-05	SHILDING CASE(L1)		
L1		*	L34-1290-08	CØIL		
L2		*	L39-0464-08	RF CØIL		
L3		*	L34-1291-08	CØIL		
L4		*	L34-1290-08	CØIL		

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R45			RK73FB2A333J	CHIP R 33K J 1/10W		
R46			RK73FB2A153J	CHIP R 15K J 1/10W		
R47			RK73FB2A220J	CHIP R 22 J 1/10W		
R48			RK73FB2A101J	CHIP R 100 J 1/10W		
R49			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R50			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R51			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R52			RK73FB2A331J	CHIP R 330 J 1/10W		
R53			RK73FB2A101J	CHIP R 100 J 1/10W		
R54			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R55			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R56			RK73FB2A331J	CHIP R 330 J 1/10W		
R57			RK73FB2A101J	CHIP R 100 J 1/10W		
R58			RK73FB2A822J	CHIP R 8.2K J 1/10W		
R59			RK73FB2A152J	CHIP R 1.5K J 1/10W		
R60			RK73FB2A681J	CHIP R 680 J 1/10W		
R61 ,62			RK73FB2A152J	CHIP R 1.5K J 1/10W		
R63			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R64 ,65			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R66			RK73FB2A103J	CHIP R 10K J 1/10W		
R67 ,68			RK73FB2A101J	CHIP R 100 J 1/10W		
R69			RD14BB2C103J	RD 10K J 1/6W	W	
R70			RK73FB2A104J	CHIP R 100K J 1/10W		
R71			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R72			RK73FB2A154J	CHIP R 150K J 1/10W		
R73			RK73FB2A104J	CHIP R 100K J 1/10W		
R74			RK73FB2A330J	CHIP R 33 J 1/10W		
R75 ,76			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R77			RK73FB2A224J	CHIP R 220K J 1/10W		
R78			RK73FB2A100J	CHIP R 10 J 1/10W		
R79			RK73FB2A681J	CHIP R 680 J 1/10W		
R80			RK73FB2A151J	CHIP R 150 J 1/10W		
R81			RK73FB2A272J	CHIP R 2.7K J 1/10W		
R82			R92-0685-05	CHIP R 22 J 1/2W	W	
R83 ,84			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R85			RK73FB2A100J	CHIP R 10 J 1/10W		
R86 ,87			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R88			RK73FB2A471J	CHIP R 470 J 1/10W		
R89			RK73FB2A100J	CHIP R 10 J 1/10W		
R90			RK73FB2A471J	CHIP R 470 J 1/10W		
R91			R92-1201-05	SILID 220 1/2W	W	
R92			RK73FB2A104J	CHIP R 100K J 1/10W		
R93			RK73FB2A152J	CHIP R 1.5K J 1/10W		
R94			RK73FB2A103J	CHIP R 10K J 1/10W		
R95			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R96			RK73FB2A683J	CHIP R 68K J 1/10W		
R97			RK73FB2A105J	CHIP R 1.0M J 1/10W		
R98			RK73FB2A681J	CHIP R 680 J 1/10W		
R99 ,100			RK73FB2A103J	CHIP R 10K J 1/10W		
R101			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R102			RK73FB2A101J	CHIP R 100 J 1/10W		
R103 ,104			RK73FB2A103J	CHIP R 10K J 1/10W		
R105			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R106			RK73FB2A101J	CHIP R 100 J 1/10W		
R107			RK73FB2A123J	CHIP R 12K J 1/10W		

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R108			RK73FB2A103J	CHIP R 10K J 1/10W		
R109			RK73FB2A471J	CHIP R 470 J 1/10W		
R110			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R111			RK73FB2A103J	CHIP R 10K J 1/10W		
R112			RK73FB2A152J	CHIP R 1.5K J 1/10W		
R113			RK73FB2A101J	CHIP R 100 J 1/10W		
R114			RK73FB2A125J	CHIP R 1.2M J 1/10W		
R115-118			RK73FB2A154J	CHIP R 150K J 1/10W		
R119			RK73FB2A103J	CHIP R 10K J 1/10W		
R120			RK73FB2A184J	CHIP R 180K J 1/10W		
R121			RK73FB2A683J	CHIP R 68K J 1/10W		
R122			RK73FB2A104J	CHIP R 100K J 1/10W		
R123			RK73FB2A181J	CHIP R 180 J 1/10W		
R124			RK73FB2A150J	CHIP R 15 J 1/10W		
R125, 126			RK73FB2A4R7J	CHIP R 4.7 J 1/10W		
R127			RK73FB2A103J	CHIP R 10K J 1/10W		
R128			RK73FB2A152J	CHIP R 1.5K J 1/10W		
R129			RK73FB2A474J	CHIP R 470K J 1/10W		
R130			RK73FB2A220J	CHIP R 22 J 1/10W		
R131			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R132			RK73FB2A123J	CHIP R 12K J 1/10W		
R133, 134			RK73FB2A103J	CHIP R 10K J 1/10W		
R135			RK73FB2A181J	CHIP R 180 J 1/10W		
R136			RK73FB2A152J	CHIP R 1.5K J 1/10W		
R137, 138			RK73FB2A4R7J	CHIP R 4.7 J 1/10W		
R139			RK73FB2A223J	CHIP R 22K J 1/10W		
R140			RK73FB2A221J	CHIP R 220 J 1/10W		
R141			RK73FB2A334J	CHIP R 330K J 1/10W		
R143-145			RK73FB2A104J	CHIP R 100K J 1/10W		
R146			RK73FB2A152J	CHIP R 1.5K J 1/10W		
R147			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R148-150			RK73FB2A104J	CHIP R 100K J 1/10W		
R151			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R152			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R153			RK73FB2A681J	CHIP R 680 J 1/10W		
R154			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R155			RK73FB2A331J	CHIP R 330 J 1/10W		
R156			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R157			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R158			RK73FB2A392J	CHIP R 3.9K J 1/10W		
R159			RK73FB2A103J	CHIP R 10K J 1/10W		
R160			RK73FB2A153J	CHIP R 15K J 1/10W		
R161			RK73FB2A333J	CHIP R 33K J 1/10W		
R162			RK73FB2A154J	CHIP R 150K J 1/10W		
R163, 164			RK73FB2A104J	CHIP R 100K J 1/10W		
R165			RK73FB2A473J	CHIP R 47K J 1/10W		
R166			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R167			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R168			RK73FB2A182J	CHIP R 1.8K J 1/10W		
R169			RK73FB2A101J	CHIP R 100 J 1/10W		
R170			RK73FB2A103J	CHIP R 10K J 1/10W		
R171			RK73FB2A224J	CHIP R 220K J 1/10W		
R172			RK73FB2A103J	CHIP R 10K J 1/10W		
R173			RK73FB2A104J	CHIP R 100K J 1/10W		
R174			RK73FB2A103J	CHIP R 10K J 1/10W		

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R175 R176 R177 R178, 179 R180			RK73FB2A224J RK73FB2A474J RK73FB2A103J RK73FB2A473J RK73FB2A101J	CHIP R 220K J 1/10W CHIP R 470K J 1/10W CHIP R 10K J 1/10W CHIP R 47K J 1/10W CHIP R 100 J 1/10W		
R181 R182, 183 R184 R185-187 R188			RK73FB2A105J RK73FB2A103J RK73FB2A102J RK73FB2A184J RK73FB2A102J	CHIP R 1.0M J 1/10W CHIP R 10K J 1/10W CHIP R 1.0K J 1/10W CHIP R 180K J 1/10W CHIP R 1.0K J 1/10W		
R189 R190 R191-193 R196 R197		*	RD14DB3AR47J R92-1061-05 RK73FB2A103J RK73FB2A473J RK73FB2A123J	SMALL-RD 0.47 J 1W JUMPER REST 0 OHM CHIP R 10K J 1/10W CHIP R 47K J 1/10W CHIP R 12K J 1/10W	W	
R198-200 R201 R202 R210 R211			RK73FB2A473J RK73FB2A105J RK73FB2A100J RD14BB2C473J RK73FB2A102J	CHIP R 47K J 1/10W CHIP R 1.0M J 1/10W CHIP R 10 J 1/10W RD 47K J 1/6W CHIP R 1.0K J 1/10W	W	
R212 R213 R214 TH1 VR1		*	RK73FB2A471J RK73FB2A822J RK73FB2A224J TSD2FIL154S R12-5046-05	CHIP R 470 J 1/10W CHIP R 8.2K J 1/10W CHIP R 220K J 1/10W THERMISTER TRIMMING POT. 100K		
VR2 VR3 VR4 VR5 VR6			R12-3097-05 R12-6012-05 R12-5046-05 R12-8015-05 R12-3097-05	TRIMMING POT. 22K TRIMMING POT. 470K TRIMMING POT. 100K TRIMMING POT. 1M TRIMMING POT. 22K		
VR7 VR8 VR9 VR10		*	R12-3099-05 R12-5047-05 R05-3453-08 R05-4427-08	TRIMMING POT. 47K TRIMMING POT. 220K POTENTIOMETER 10K POTENTIOMETER 50K		
RL1		*	S51-1439-08	RELAY		
D1 ,2 D3 D4 D5 D6			1SS106 1SS187 MI308 MI407 1N4002	DIODE CHIP DIODE DIODE DIODE DIODE		
D7 -10 D11 D12 ,13 D14 D15 ,16			1SV166 1SS226 1SS53 1S1555 1SS53	CHIP DIODE CHIP DIODE DIODE DIODE DIODE		
D17 D18 D19 IC1 IC2		*	1SV166 DSA3A1 1S1555 TK10485MT1 MB87014A	CHIP DIODE DIODE DIODE IC(FM IF) IC(PLL)		
IC3 IC4 -6 IC7 IC8 ,9		*	UPC7808H UPD4094BG UPC78L05J NJM4558M	IC(VOLTAGE REGULATOR/+8V) IC(8 STAGE SHIFT REGISTER) IC(VOLTAGE REGULATOR/+5V) IC(OP AMP X2)		

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IC10 IC11 IC12 IC13 IC14		*	UPD4066BG LA4445 LA4461N NJM4558M UPD4066BG	IC(QUAD BILATERAL SWITCH) IC(2 CHANNEL POWER AMP 5.5W) IC(AF POWER AMP 2W) IC(OP AMP X2) IC(QUAD BILATERAL SWITCH)		
IC15 Q1 ,2 Q3 Q4 Q5			NJM2903M 3SK131(V12) 2SC2714(Y) 2SC2712(GR) 2SA1162(GR)	IC(OP AMP X2) CHIP FET CHIP TRANSISTOR CHIP TRANSISTOR CHIP TRANSISTOR		
Q6 Q7 Q8 Q9 Q10			2SC2712(GR) M57710-A 2SC3369 3SK131(V12) 2SC2714(Y)	CHIP TRANSISTOR IC(POWER MODULE) TRANSISTOR CHIP FET CHIP TRANSISTOR		
Q11 ,12 Q13 Q14 Q15 Q16			2SC2757 2SC2712(GR) 2SB1015(Y) FMW-1 2SA1162(GR)	CHIP TRANSISTOR CHIP TRANSISTOR TRANSISTOR CHIP TRANSISTOR ARRAY CHIP TRANSISTOR		
Q17 Q18 Q19 Q20 -22 Q23 -27		*	2SC2712(GR) 2SA1162(GR) 2SC2712(GR) DTK124EK 2SC2712(GR)	CHIP TRANSISTOR CHIP TRANSISTOR CHIP TRANSISTOR CHIP DIGITAL TRANSISTOR CHIP TRANSISTOR		
Q28 Q29 ,30			2SA1162(GR) 2SC2712(GR)	CHIP TRANSISTOR CHIP TRANSISTOR		
42		*	W02-0868-08	ROTARY ENCODER		
VCO UNIT (W02-0870-08)						
C1 ,2 C3 C4 C5 C6			CK73FB1H102K CC73FCH1H150J CC73FCH1H680J CC73FCH1H220J CC73FCH1H680J	CHIP C 1000PF K CHIP C 15PF J CHIP C 68PF J CHIP C 22PF J CHIP C 68PF J		
C7 C8 C9 C10 ,11 C13			CC73FCH1H101J CC73FCH1H050D CE04EW1A101M CK73FB1H102K CK73FB1H102K	CHIP C 100PF J CHIP C 5.0PF D ELECTRO 100UF 10WV CHIP C 1000PF K CHIP C 1000PF K		
C14 C15 ,16 C17 C18 C19			CC73FCH1H470J CC73FCH1H151J CC73FCH1H050D CK73FB1H222K CE04EW1A101M	CHIP C 47PF J CHIP C 150PF J CHIP C 5.0PF D CHIP C 2200PF K ELECTRO 100UF 10WV		
C20 C21 C22 C23 C24		*	CK73FB1H222K CC73FCH1H120J CK73FB1H222K CC73FCH1H101J CC73FCH1H0R5D	CHIP C 2200PF K CHIP C 12PF J CHIP C 2200PF K CHIP C 100PF J CHIP C 0.5PF D		
C25 ,26 C27 TC1 ,2			CK73FB1H102K CC73FCH1H221J C05-0350-05	CHIP C 1000PF K CHIP C 220PF J TRIMMER C. 20PF		
		*	E40-5350-08	CONNECTOR(5P)		

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Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
L1 ,2 L3 ,4 L5		*	E40-5351-08	CONNECTOR(3P)		
R1 R2 R3 R4 R5		*	L40-1092-81 L34-2366-08 L40-6872-80	CHIP COIL 1UH COIL CHIP COIL 68MH		
R6 ,7 R8 R9 R10 R11			RK73FB2A103J RK73FB2A104J RK73FB2A152J RK73FB2A103J RK73FB2A152J	CHIP R 10K J 1/10W CHIP R 100K J 1/10W CHIP R 1.5K J 1/10W CHIP R 10K J 1/10W CHIP R 1.5K J 1/10W		
R12 R13			RK73FB2A681J RK73FB2A102J RK73FB2A472J RK73FB2A102J RK73FB2A470J	CHIP R 680 J 1/10W CHIP R 1.0K J 1/10W CHIP R 4.7K J 1/10W CHIP R 1.0K J 1/10W CHIP R 47 J 1/10W		
D1 -5 Q1 ,2 Q3 ,4 Q5			RK73FB2A220J RK73FB2A470J	CHIP R 22 J 1/10W CHIP R 47 J 1/10W		
			1SV164 2SC3606 DTC124EK 2SC2757	VARI-CAP DIODE CHIP TRANSISTOR CHIP DIGITAL TRANSISTOR CHIP TRANSISTOR		
CONTROL UNIT (W02-087x-xx)						
C2 C3 ,4 C6 C7 ,8 C9		*	B11-0481-08 B11-0482-08 B30-0888-08 B38-0328-08	SHEET(LCD) REFLECTOR(LCD) LAMP LCD		
C11 C12 C13 C14 C15 ,16		*	C92-0004-05 C92-0016-05 CE04EW0J470M CC73FCH1H220K CK73FB1H102K	CHIP-TAN 1UF 16WV TANTAL 10UF M ELECTRO 47UF 6.3WV CHIP C 22PF K CHIP C 1000PF K		
C17 C18 C19 C20 -22 C23		*	CK73FB1H102K CC73FCH1H101K CK73FB1H102K C92-0004-05 CK73FB1H102K	CHIP C 1000PF K CHIP C 100PF K CHIP C 1000PF K CHIP-TAN 1UF 16WV CHIP C 1000PF K		
C24 C25 C26 ,27		*	CC73FCH1H101K CK73FB1H103K C92-0004-05 CK73FB1H102K CK73FB1H102K	CHIP C 100PF K CHIP C 0.010UF K CHIP-TAN 1UF 16WV CHIP C 1000PF K CHIP C 1000PF K	KMX	
		*	CK73FB1H102K CK73FB1H102K CK73FB1H102K	CHIP C 1000PF K CHIP C 1000PF K CHIP C 1000PF K	KMPX KMPT	
		*	E29-0485-08 E31-6146-08 E31-6147-08 E31-6148-08 E31-6149-08	CONNECTOR(LCD) CONNECTING WIRE CONNECTING WIRE CONNECTING WIRE CONNECTING WIRE		
		*	F20-1014-08	INSULATING SHEET(BATT)		
		*	L78-0049-08	CERAMIC RESONATOR		
R1			RK73FB2A682J	CHIP R 6.8K J 1/10W		

E: Scandinavia & Europe K: USA P: Canada W: Europe

U: PX(Far East, Hawaii) T: England M: Other Areas

UE: AAFES(Europe) X: Australia

⚠ indicates safety critical components.

PARTS LIST

* New Parts

Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
R2 -4			RK73FB2A472J	CHIP R 4.7K J 1/10W	PT T X	
R6			R92-0687-05	CHIP R 0 0HM		
R7			R92-0687-05	CHIP R 0 0HM		
R8			R92-0687-05	CHIP R 0 0HM		
R9			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R10			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R11			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R12 ,13			RK73FB2A4R7J	CHIP R 4.7 J 1/10W		
R14			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R15			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R16			RK73FB2A221J	CHIP R 220 J 1/10W		
R17			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R18			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R19			RK73FB2A335J	CHIP R 3.3M J 1/10W		
R20			RK73FB2A104J	CHIP R 100K J 1/10W		
R21			RK73FB2A473J	CHIP R 47K J 1/10W		
R22			RK73FB2A682J	CHIP R 6.8K J 1/10W		
R23			RK73FB2A105J	CHIP R 1.0M J 1/10W		
R24			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R25			RK73FB2A562J	CHIP R 5.6K J 1/10W		
R26			RK73FB2A103J	CHIP R 10K J 1/10W		
R27			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R28			RK73FB2A104J	CHIP R 100K J 1/10W		
R29			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R30			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R31			RK73FB2A333J	CHIP R 33K J 1/10W		
R32			RK73FB2A104J	CHIP R 100K J 1/10W		
R33 -38			RK73FB2A473J	CHIP R 47K J 1/10W		
R39			RK73FB2A104J	CHIP R 100K J 1/10W		
R40 ,41			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R42			RK73FB2A103J	CHIP R 10K J 1/10W		
R43			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R44 ,45			RK73FB2A104J	CHIP R 100K J 1/10W		
R46 -51			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R52 -61			RK73FB2A102J	CHIP R 1.0K J 1/10W		
		*	S40-1443-08	TACT SWITCH		
D1 ,2			1SS187	CHIP DIODE		
D3		*	02CZ3.6Z	CHIP ZENER DIODE		
D5			1SS106	DIODE		
IC1		*	75328GC-057-3B9	IC(MICROPROCESSOR)		
IC2			LA5006M	IC(LOE SATURATION REGULATOR)		
Q1			2SB1119S	CHIP TRANSISTOR		
Q2			FMW-1	CHIP TRANSISTOR ARRAY		
Q6			2SA1162GR	CHIP TRANSISTOR		
Q7 ,8			2SC2712GR	CHIP TRANSISTOR		
Q10 ,11			2SA1162GR	CHIP TRANSISTOR		
			W09-0326-05	LITHIUM BATTERY		

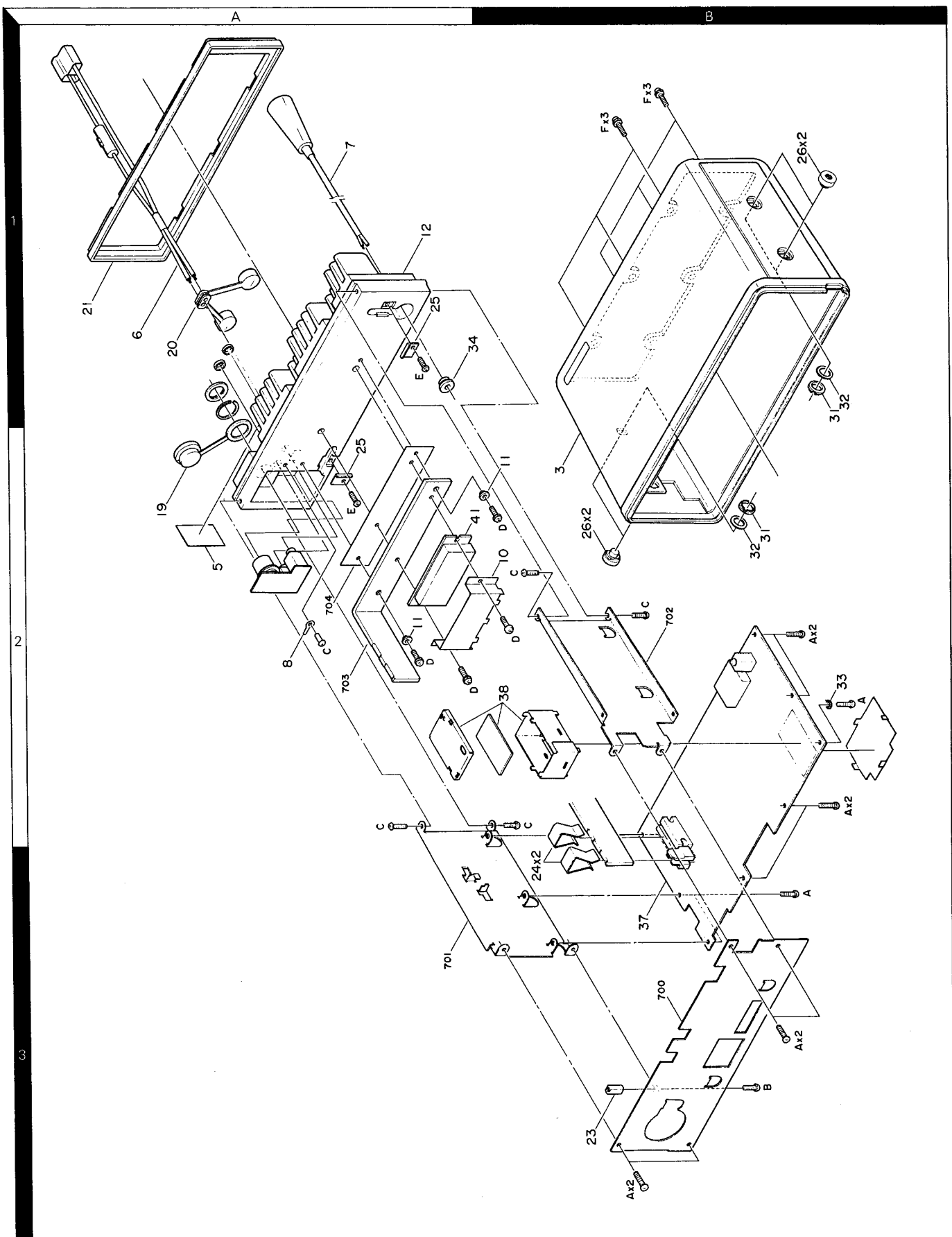
E: Scandinavia & Europe K: USA P: Canada W: Europe

U: PX(Far East, Hawaii) T: England M: Other Areas

UE: AAFES(Europe) X: Australia

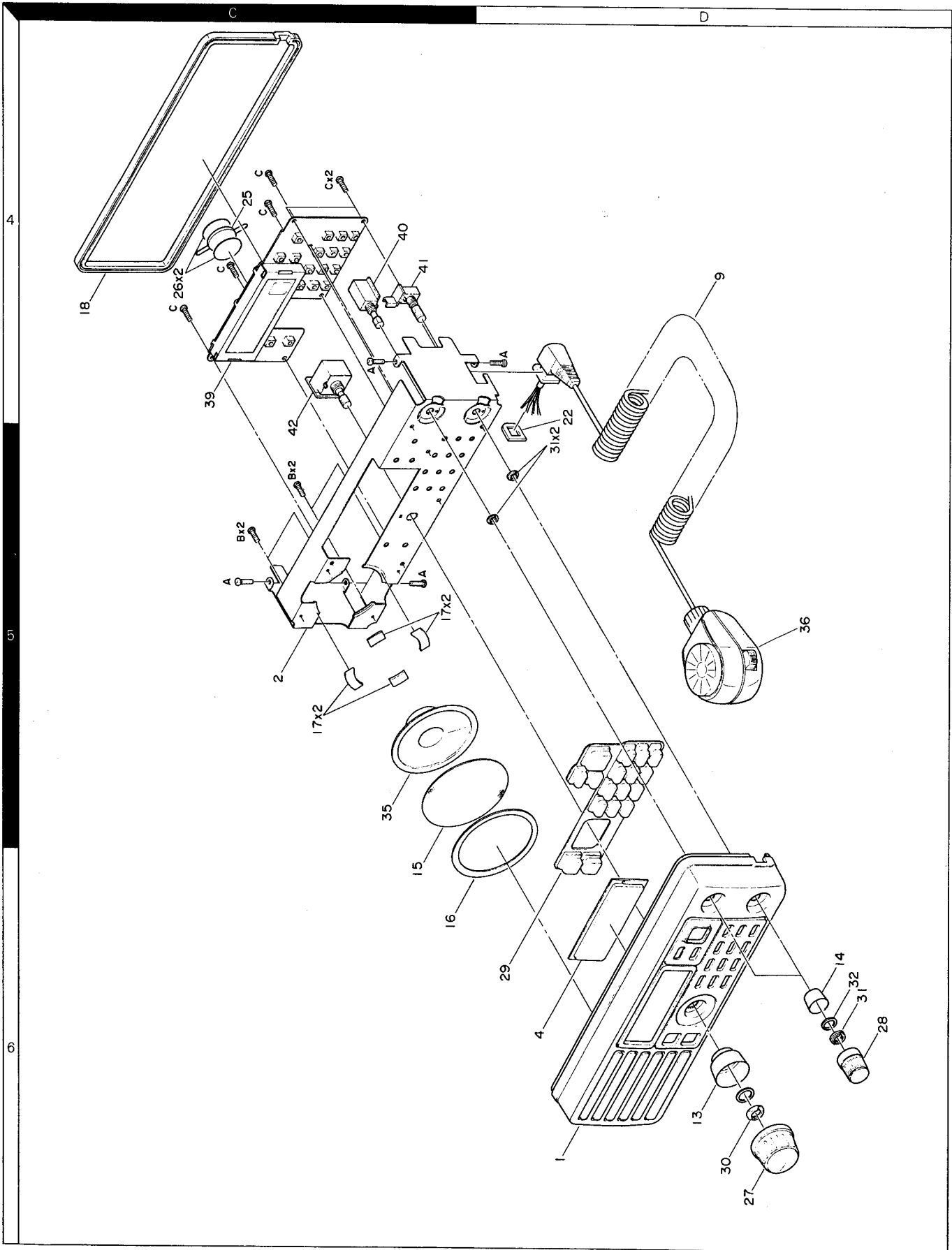
⚠ indicates safety critical components.

EXPLODED VIEW

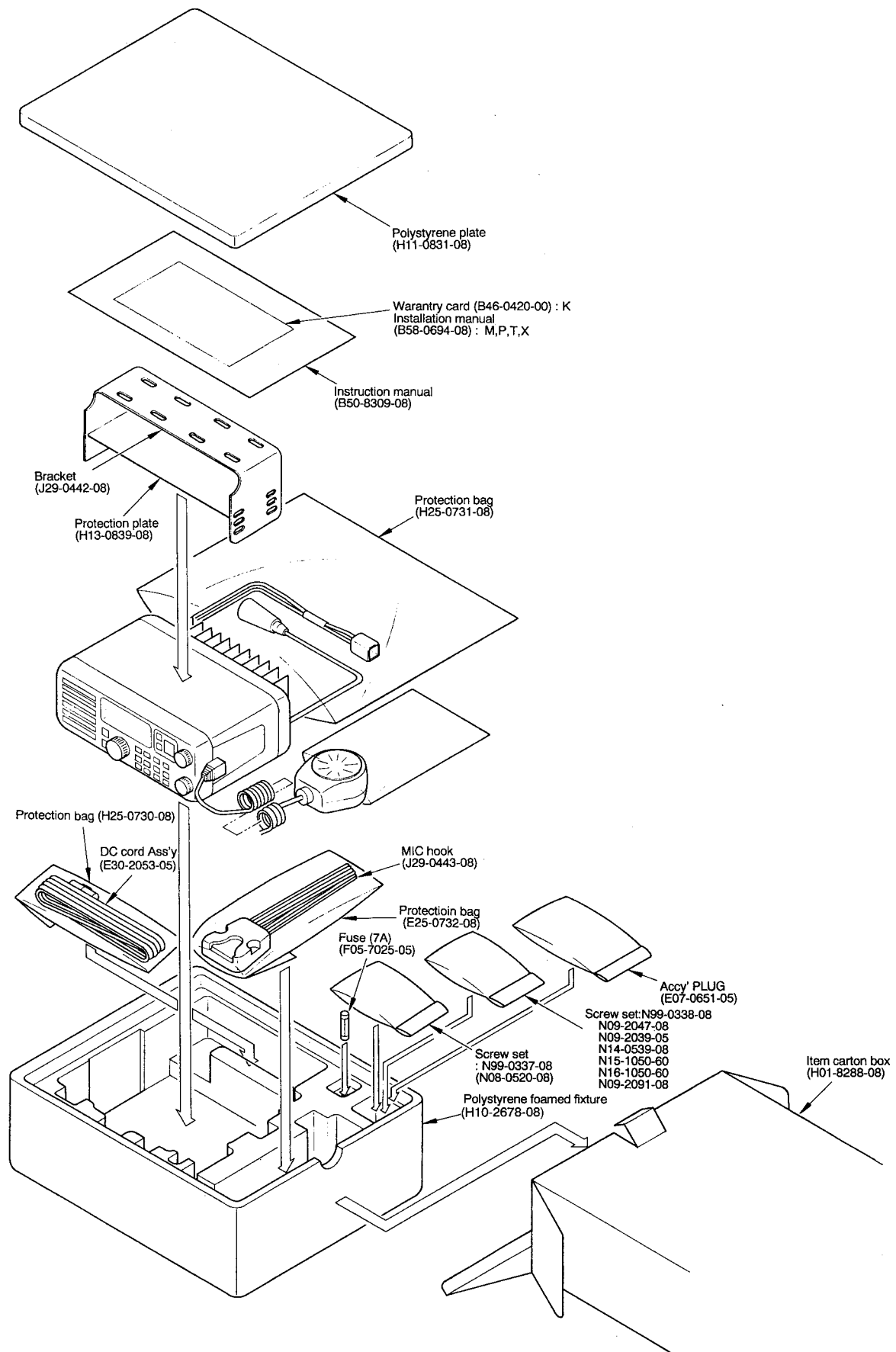


Parts with the exploded numbers larger than 700 are not supplied. 29

EXPLODED VIEW



PACKING



ADJUSTMENT

REQUIRED TEST EQUIPMENT

1. DC V.M

- 1) High input impedance

2. RF VTVM (RF V.M)

- 1) Input impedance: $1\text{ M}\Omega$ min., 2 pF max.
- 2) Voltage range: F.S = $10\text{ mV} \sim 300\text{ V}$
- 3) Frequency range: Up to 450 MHz

3. Frequency Counter (f. counter)

- 1) Input sensitivity: Approx. 50 mV
- 2) Frequency range: Up to 450 MHz

4. DC Power Supply

- 1) Voltage: $10\text{ V} \sim 17\text{ V}$, variable
- 2) Current: 6 A min.

5. Power Meter

- 1) Measurement range Approx.: 30 W , 3 W , 1 W
- 2) Input impedance: 50Ω
- 3) Frequency range: 450 MHz

6. AF VTVM (AF V.M)

- 1) Input impedance: $1\text{ M}\Omega$ min.
- 2) Voltage range: F.S = $1\text{ mV} \sim 30\text{ V}$
- 3) Frequency range: $50\text{ Hz} \sim 10\text{ kHz}$

7. AF Generator (AG)

- 1) Output frequency: $100\text{ Hz} \sim 10\text{ kHz}$
- 2) Output voltage: $0.5\text{ mV} \sim 1\text{ V}$

8. Linear Detector

- 1) Frequency range: 450 MHz

9. Directional Coupler

10. Oscilloscope

- 1) High sensitivity oscilloscope with horizontal input terminal

11. SSG

- 1) Frequency range: 144 MHz and 430 MHz bands
- 2) Modulation: AM and FM MOD.
- 3) Output level: -20 dB to 100 dB

12. Dummy Load

- 1) 4Ω , 20 W (approx.)

13. Distortion Meter

- 1) Capability: 3% or less at 1 kHz
- 2) Input level: 50 mV to 10 V rms

PREPARATION

- 1) Unless otherwise specified, knobs and switches should be set as follows **Table 5**.

POWER SW	ON	MR SW	OFF
VOLUME	MIN	WX SW	OFF
SQUELCH	MIN	SCAN SW	OFF
HAIL	OFF	DIAL SW	OFF
INCOM	OFF	CH16 SW	OFF

Table 5

- 2) Use an insulated adjusting rod to adjust trimmers and coils.
- 3) Be sure to turn the power switch OFF, before connecting the power cable to a power source.
- 4) Meter and display section should be set as follows **Fig. 9**.

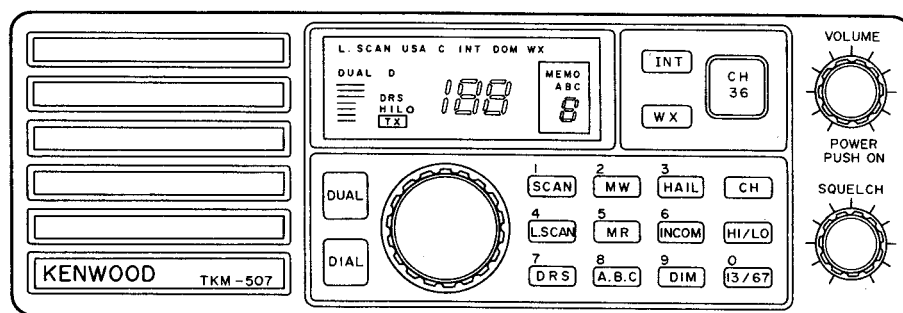
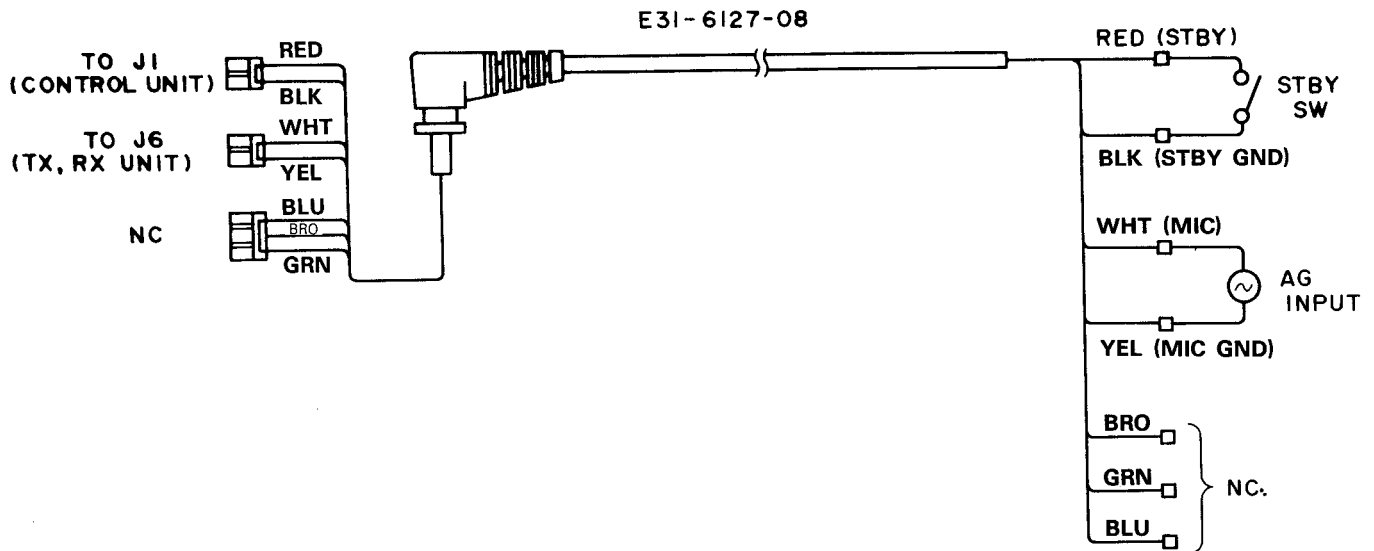


Fig. 9

ADJUSTMENT

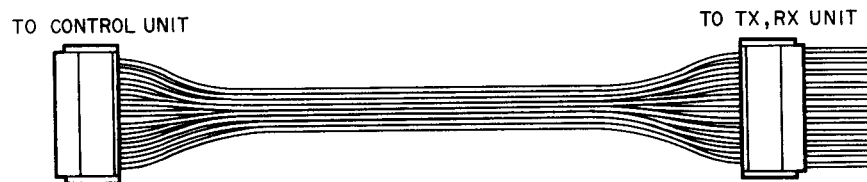
Cable for measurement use (E31-6127-08)

For adjusting the TKM-507, use the cable shown below:



Cable for maintenance use (E30-2195-08)

Use the cable shown below for connection between J13 (pin 11) on the TX-RX unit and P1 (pin 11) on the control unit.



ADJUSTMENT

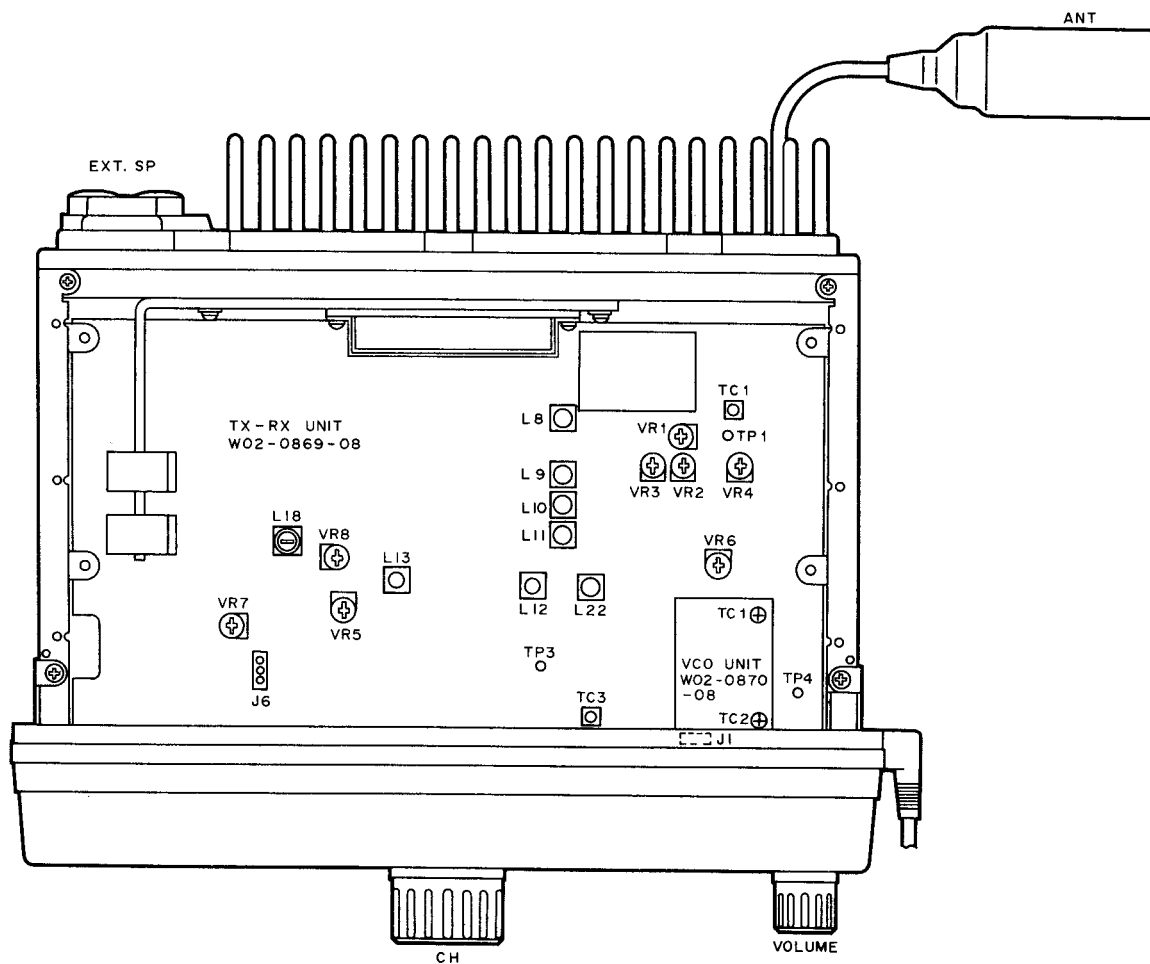
Caution:

The HAILER amplifier of this equipment provides the BTL output. Connection to SP, therefore, must follow the instructions below:

Connect HAILER SP to ACC output terminals ③ and ② on the rear panel. Never connect these terminals to GND of the power line. If even either ③ or ② is connected to the power line, a damage to internal AF IC or other elements will result.

Adjustment location

Top view



Note: Since the case is in the floating structure, it does not serve as a ground body. Connect terminals like DVM to the DC ground (on the printed circuit board).

ADJUSTMENT

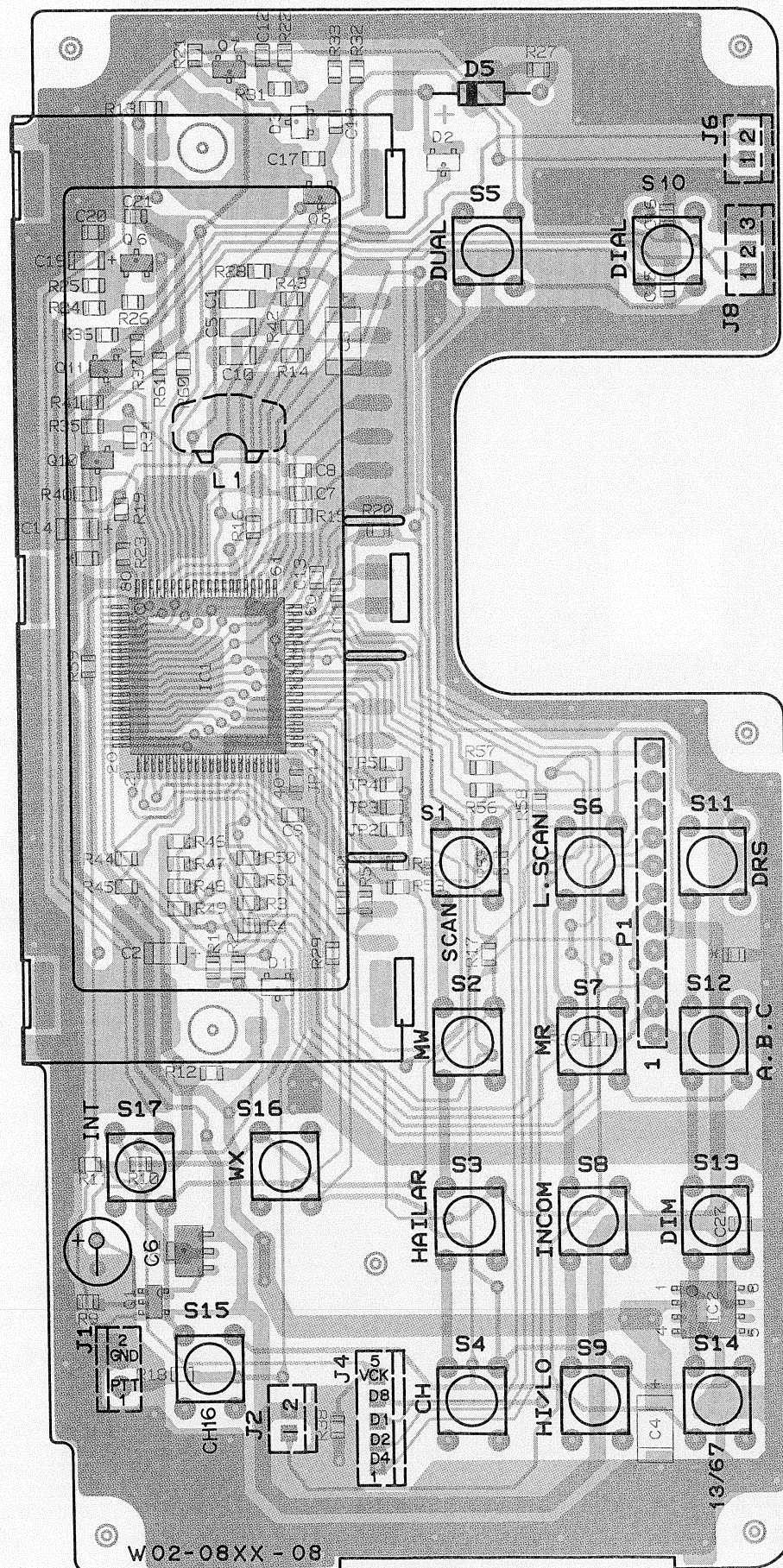
Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. Setting	1) Power supply: 13.8 VDC Power SW: OFF VOLUME: Fully counter clockwise (CCW) SQUELCH: CCW VR 1 and 3: MAX CW							
2. PLL	1) RX VCO CH: INT 88 [D] (162.025 MHz) Receive	Digital voltmeter	TX-RX	TP4	VCO	TC2	2.9 V	±0.1 V
	CH: WX 0 (163.275 MHz)						CHECK	Less than 4 V
	CH: INT 06 [S] (156.300 MHz)							More than 1.1 V
	2) TX VCO CH: INT 88 [D] (157.425 MHz) PTT: ON				VCO	TC1	2.1 V	±0.1 V
	CH: INT 06 [S] (156.300 MHz) PTT: ON						CHECK	More than 1.7 V
3. TX FREQ ADJ	CH: INT 88 (157.425 MHz) PTT: ON	f. counter Power meter	Rear Panel	ANT	TX-RX	TC3	157,425 MHz	±50 Hz
4. BPF	CH: INT 09 [S] (156.450 MHz) SSG output: 0.5 μ V/ -113 dBm MOD: 1 kHz DEV: 3 kHz	SSG, DVM	Rear Panel TX-RX	TP3	TX-RX	L8~13, L22	Repeat for MAX	
	SSG output: 5 μ V/ -73 dBm	SSG Distortion meter	TX-RX Rear Panel	EXT. SP		L18, 12, 13	MIN Distortion	
5. Sensitivity	1) CH: INT 09 [S] (156.450 MHz) SSG output: 0.3 μ V/ -117.5 dBm	SSG Distortion meter AF V, M Oscilloscope	Rear Panel	EXT. SP			CHECK	12 dB SINAD or more
	2) CH: 01 [S], 19 [S], 28 [D] WX0 K, M SSG output: 0.3 μ V/ -117.5 dBm							
	3) CH: 06 [S], 19 [S], 28 [D] WX0 P SSG output: 0.3 μ V/ -117.5 dBm							
	4) CH: 06 [S], 17 [S], 28 [D] WX0 T, X SSG output: 0.3 μ V/ -117.5 dBm							
6. Tight SQ	CH: INT 09 [S] (156.450 MHz) SSG output: 0.35 μ V/ -116 dBm SQ VOL: MAX CW				TX-RX	VR8	Squelch should be opened.	

ADJUSTMENT

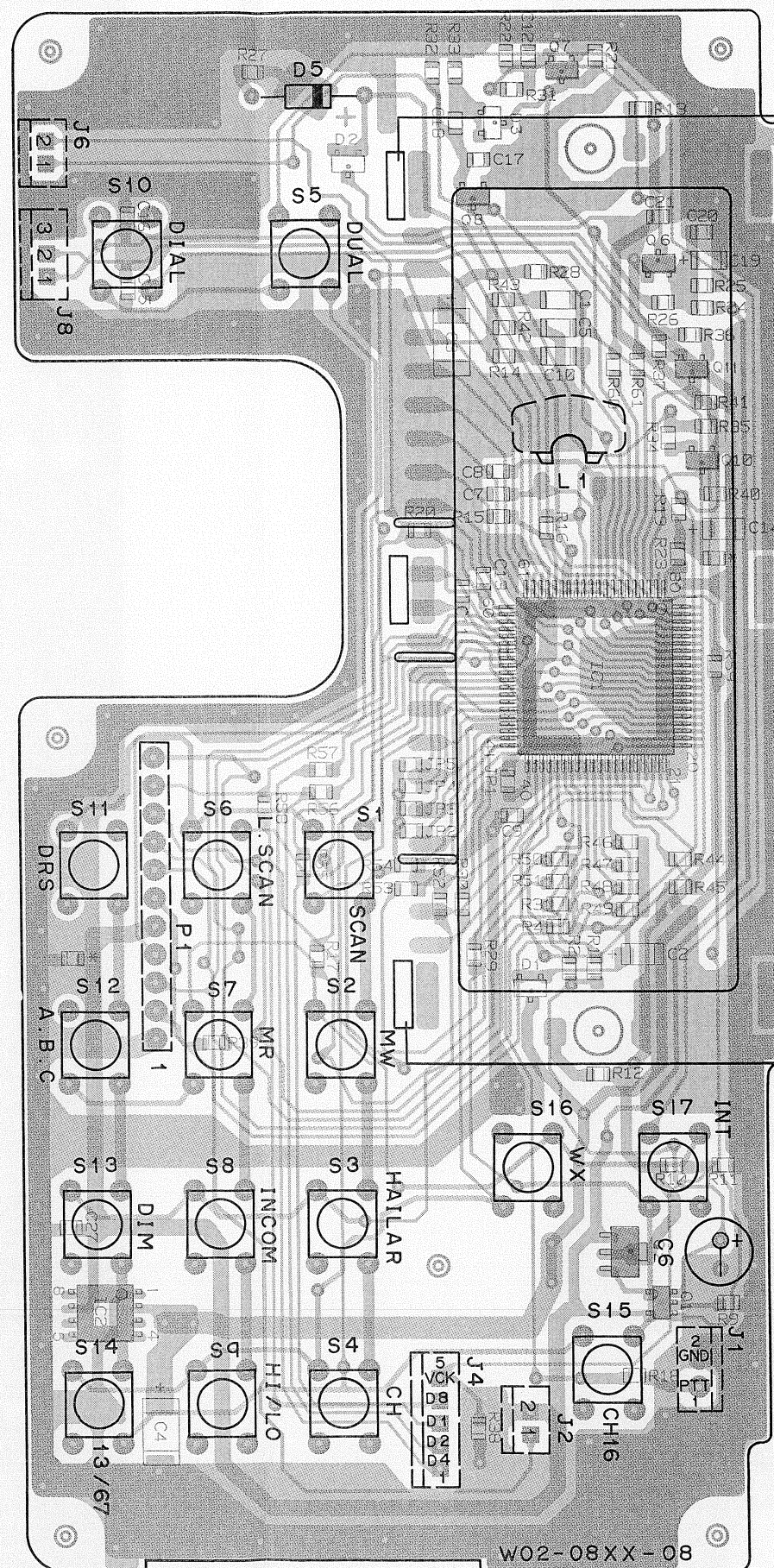
Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
7. S Meter	CH: INT 16 [S] (156.800 MHz) SSG output: 0.25 μ V/ -119 dBm	SSG AF V, M Oscillo- scope LCD (S meter)		EXT. SP	TX-RX	VR5	S meter start point	
	SSG output: 3.16 μ V/ -97 dBm						CHECK	All segments on
8. Power (APC)	CH: INT 20 [D] (157.000 MHz) HI/LO SW: HI PTT: ON	DVM	TX-RX	TP1	TX-RX	TC1	MIN	
	HI/LO SW: LO PTT: ON	Power meter DC ammeter		ANT	TX-RX	VR2	0.8 W	± 0.05 W 1.7 A or less
		LCD (RF meter)			TX-RX	VR1	4 segments on.	
	HI/LO SW: HI PTT: ON	Power meter DC ammeter		ANT	TX-RX	VR3	24 W	± 0.5 W 6A or less
9. Protec- tion	CH: INT 20 [D] (157.000 MHz) ANT: SHORT	DC ammeter		ANT	TX-RX	VR4	3 A	± 0.1 A
10. Maximum deviation	CH: INT 88 [D] (157.425 MHz) AG: 1 kHz 50 mV PTT: ON	Power meter Linear detection	Rear Panel	ANT	TX-RX	VR6	± 4.4 kHz (Read higher absolute value of + or - value)	± 100 Hz
11. MIC sensitivity	CH: INT 20 [D] AG: 1 kHz 5 mV PTT: ON					VR7	± 3 kHz	± 100 Hz

PC BOARD

▼ CONTROL UNIT (W02-087x-xx) Component side view

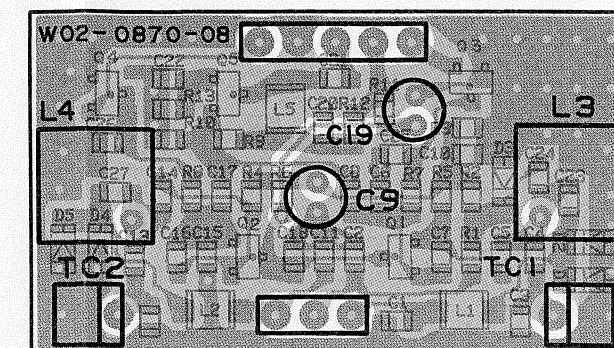


▼ CONTROL UNIT (W02-087x-xx) Foil side view

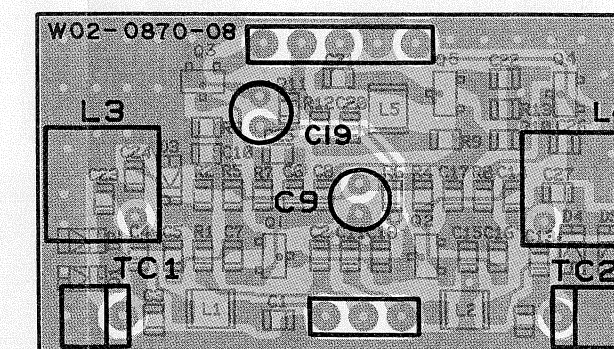


TKM-507

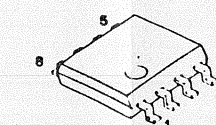
▼ VCO UNIT (W02-0870-08)
Component side view



▼ VCO UNIT (W02-0870-08)
Foil side view



LA5006M



2SA1162(GR)
2SC2712(GR)



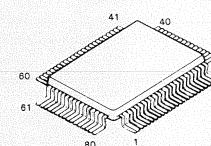
FMW-1



2SB1119S

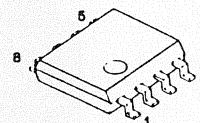


75328GC-057-3B9



2SC3706
2SC2757
DTC124EK





A diagram of a rectangular prism. The front face is labeled with '2' at the bottom right corner. The top edge of the front face is labeled with '3' at the left end, '4' in the middle, and '5' at the right end. The prism is shown in a perspective view, with dashed lines indicating hidden edges.

A diagram of a 3-pin connector. The top pin is labeled "OUTPUT", the middle pin is labeled "GND", and the bottom pin is labeled "INPUT".

A perspective view of a 14-pin DIP package. The package is rectangular with two rows of pins. Pin 1 is at the bottom left, pin 8 is at the top right, and pin 14 is at the top left.

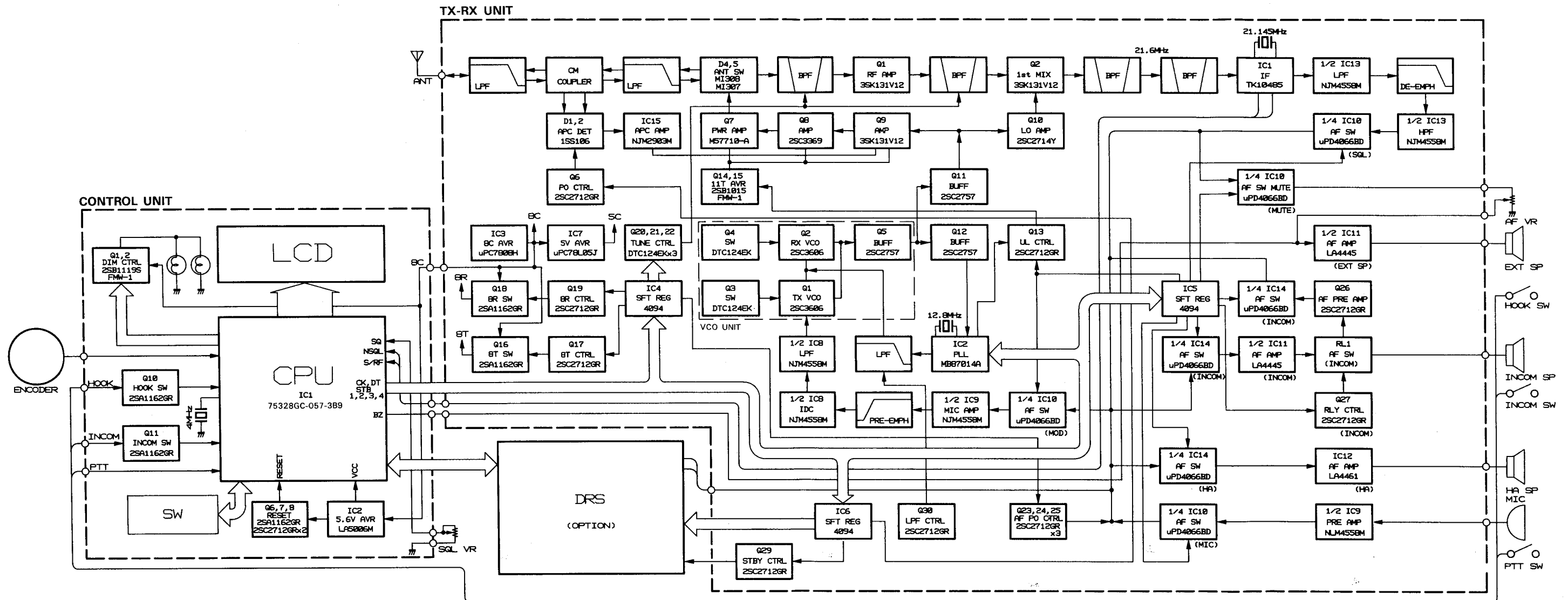
A perspective view of a 20-pin DIP package. The pins are numbered 1 through 20. Pin 1 is at the top center, and pin 20 is at the bottom center. The package is shown from an isometric perspective.

A diagram of a four-way intersection. A central circle is connected to four approach roads. The roads are labeled as follows: the top-left road is labeled 'B', the top-right road is labeled 'E', the bottom-left road is labeled 'E', and the bottom-right road is labeled 'B'.

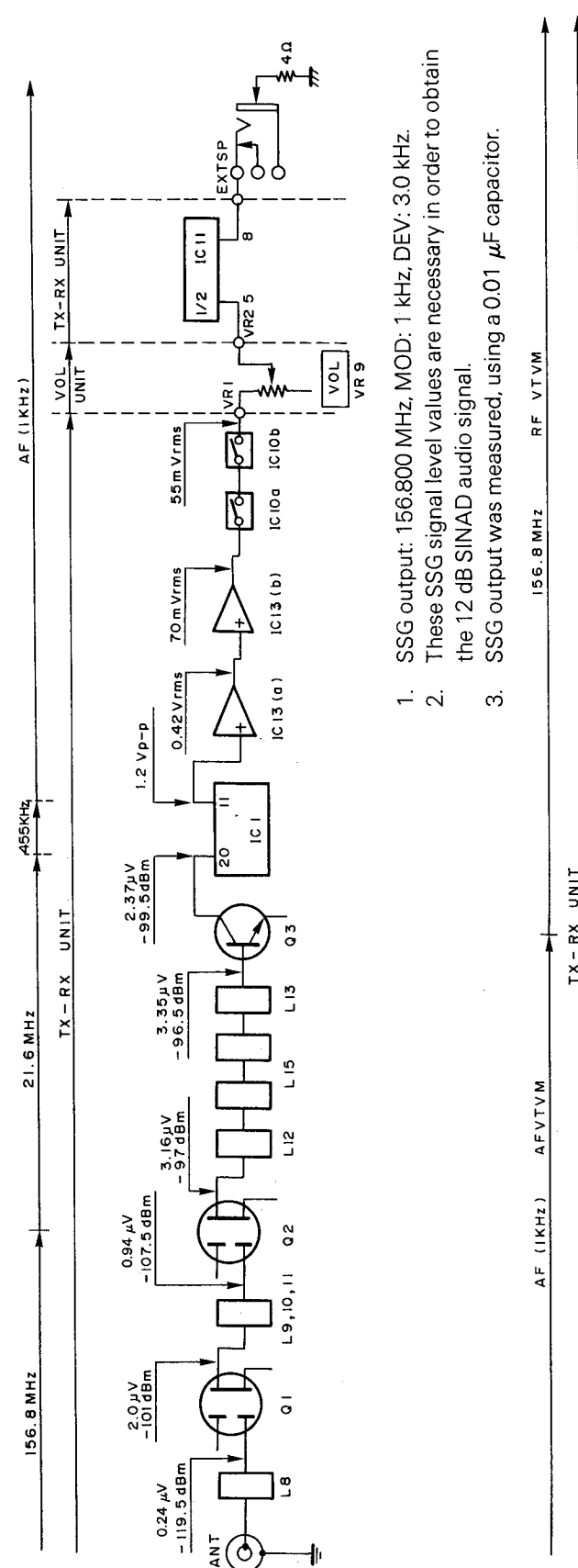
A diagram of a three-core cable. It shows a rectangular cross-section of the cable with three internal conductors. The conductors are labeled B, C, and E from left to right. Conductor B is the leftmost, C is the middle, and E is the rightmost. The conductors are shown as cylindrical shapes protruding from the cable's outer sheath.

A 3D perspective diagram of a rectangular block with a circular hole on its top surface. Four pins are shown: pin 1 is on the right side face, pin 2 is on the front face, pin 3 is on the left side face, and pin 4 is on the top surface of the block.

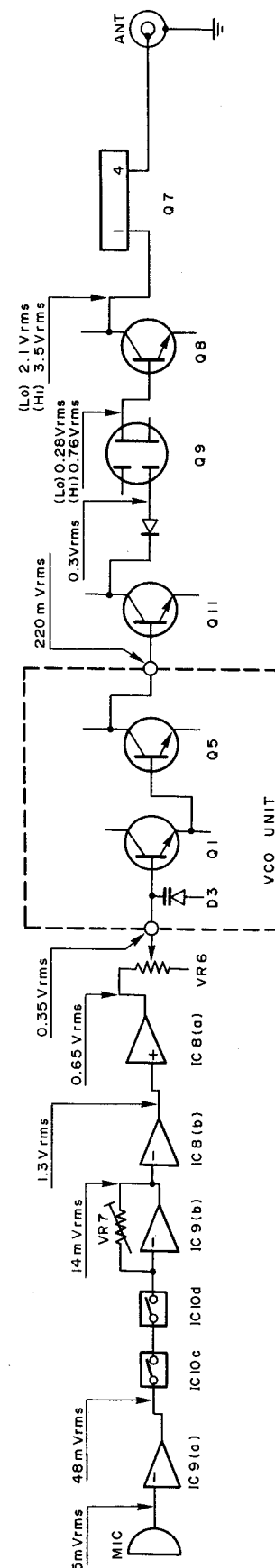
BLOCK DIAGRAM



LEVEL DIAGRAM



1. SSG output: 156.800 MHz, MOD: 1 kHz, DEV: 3.0 kHz.
2. These SSG signal level values are necessary in order to obtain the 12 dB SINAD audio signal.
3. SSG output was measured, using a 0.01 μ F capacitor.



1. ANT is terminated with $50\ \Omega$.

TERMINAL FUNCTIONS

Connector No.	Terminal No.	Terminal Name	Terminal Function
TX-RX UNIT (W02-0869-08)			
J1		EXT SPKR	External speaker
J2		HOOK	Mic hook switch
J3	1	INCOM	INCOM. call switch
	2	HA	Hailer output
	3	HA	Hailer output
	4	GND	Ground
	5	INCOM SP	Intercommunicate speaker
	6	INCOM GND	Intercommunicate ground
J4			Speaker
J5	1	ON-HOOK	Mic hook switch
	2	INCOM	INCOM. call switch
J6	1	MIC	Mic
	2	GND	Ground
	3	8	+8 V
J7			+B switch
J8			Squelch level
J9			Encoder
J10	1	VR1	} Audio level
	2	VR2	
	3	VR3	
J11	1	INCOM SP	Intercommunicate speaker
	2	INCOM GND	Intercommunicate ground
	3	EXT SP	External speaker
	4	GND	Ground
	5	HA	Hailer output
	6	HA	Hailer output
J12	1	VCK	} DRS unit (Control DATA)
	2	D8	
	3	D1	
	4	D2	
	5	D3	
J13		GND	Ground
		S/RF	S Meter/RF Meter
		NSQL	Noise squelch
		BZ	Buzzer output
		8	+8 V
		STB1	PLL enable
		STB3	IC4 enable
		STB4	IC6 enable
		STB2	IC5
		DT	PLL data
		CK	PLL clock
J14	1	VOA	NC
	2	VO	DRS Unit signal input/output
	3	VI	Ground
	4	GND	Ground
	5	BEEP	NC

Connector No.	Terminal No.	Terminal Name	Terminal Function
J15	1	DST	NC
	2	5V	+5 V
	3	DV	NC
	4	VOB	} DRS unit (Control terminal)
	5	VOA	
	6	RD	
	7	WR	
	8	ACL	
	9	STBY	
	10	DE	Ground
J16	1	CK	NC
	2	DT	NC
	3	VCK	} DRS unit (Control Terminal)
	4	GND	
	5	D8	
	6	D1	
	7	D2	
	8	D4	
J17	1	SP IN	Speaker input
	2	SP OUT	Speaker output
	3	HOOK	Hook switch
VCO UNIT (W02-0870-08)			
		8T	TX +8 V
		8	+8 V
		OUT	VCO output
		GND	Ground
		8R	RX +8 V
CONTROL UNIT (W02-087x-xx)			
P1	1	GND	Ground
	2	S/RF	S Meter/RF Meter
	3	NSQL	Noise squelch
	4	BZ	Buzzer output
	5	8C	+8 V
	6	STB1	PLL enable
	7	STB3	IC4 enable
	8	STB4	IC6 enable
	9	STB2	IC5 enable
	10	DT	PLL data
	11	CK	PLL clock
J1	1	PTT	PTT switch
	2	GND	Ground
J2-J3	1		Squelch level
	2		Ground
J4-J5	1	D4	} DRS unit (Control Terminal)
	2	D2	
	3	D1	
	4	D8	
	5	VCK	
J6-J7	1		Hook switch/input
	2		INCOM. call switch
J8-J9	1		CH switch data
	2		
	3		

MDR-1 (DIGITAL RECORDING UNIT)

MDR-1 CIRCUIT DESCRIPTION

1. Overview

The MDR-1 is a digital recording and playback unit designed to be installed inside the TKM-507. This unit has the following features:

- Recording received audio (for output to the internal speaker) or transmit audio (microphone input)
- Outputting recorded audio to the internal speaker or outputting recorded audio as modulating signals during transmission
- Built-in lithium battery back-up for maintaining DRU-1 contents

2. Operations

• Recording received audio (for output to the internal speaker)

A received signal from the VO pin is fed into pin 1 (0Y) of the multiplexer IC1 (TC4052BF). It is then fed into pin 59 (MIC IN) of IC3 (TC8830F) via pin 3 (Y). The signal is amplified approx. 26dB by a mic amplifier in IC3, and output via pin 60 (C1). The signal from pin 60 is fed into pin 63 (C2) and amplified approx. 20dB. The amplified signal is applied to pin 64 (MIC OUT) and pin 65 (ADI).

• Recording transmit audio (microphone input)

Microphone input from the VI pin is amplified by Q5, and fed into pin 2 (2Y) of the multiplexer IC1 (TC4052BF). It is then supplied to IC3 (TC8830F) via pin 3 (Y) and recorded in the same way as in recording received sound.

• Outputting recorded audio to the internal speaker

D/A convertor output from pin 66 (DAO) of IC3 (TC8830F) is passed through a CR filter, and amplified by Q6. The amplified signal is then fed into pin 13 (X) of the multiplexer IC1 (TC4052BF), and output to the VO pin via pin 14 (1X).

• Outputting recorded audio as modulating signals during transmission

When sound recorded in the DRU-1 is played during transmission, the same operations as written above in outputting recorded audio to the internal speaker occur. That is, D/A convertor output from pin 66 (DAO) of IC3 (TC8830F) is passed through a CR filter, amplified by Q6, and fed into pin 13 (X) of the multiplexer IC1 (TC4052BF). The sound, however, is output via pin 11 (3X).

	VOA (pin 10)	VOB (pin 9)	On channel
Output to speaker	H	L	1X (pin 14)
Output during transmission	H	H	3X (pin 11)
Received audio recording	L	L	0Y (pin 1)
Transmit aidop recording	L	H	2Y (pin 2)

Table 1 IC1 : TC4052BF operations

MDR-1 DESCRIPTION OF COMPONENTS

ACCESSORY UNIT (X42-3010-00)

Component	Use/Function	Description
IC1	Multiplexer	See DRU-1 circuit description.
IC3	Audio recording and playback	See DRU-1 semiconductor data.
IC4~7	S-RAM	
Q5	AF amplification	Mic input amplification.
Q6	AF amplification	Playback sound amplification.
D1	Reverse current prevention	
D2	Reverse current prevention	Back-up.

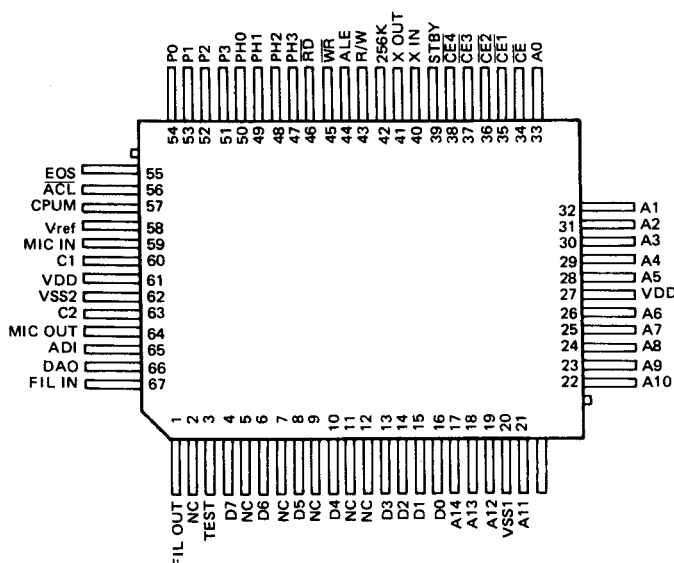
TKM-507

MDR-1 (DIGITAL RECORDING UNIT)

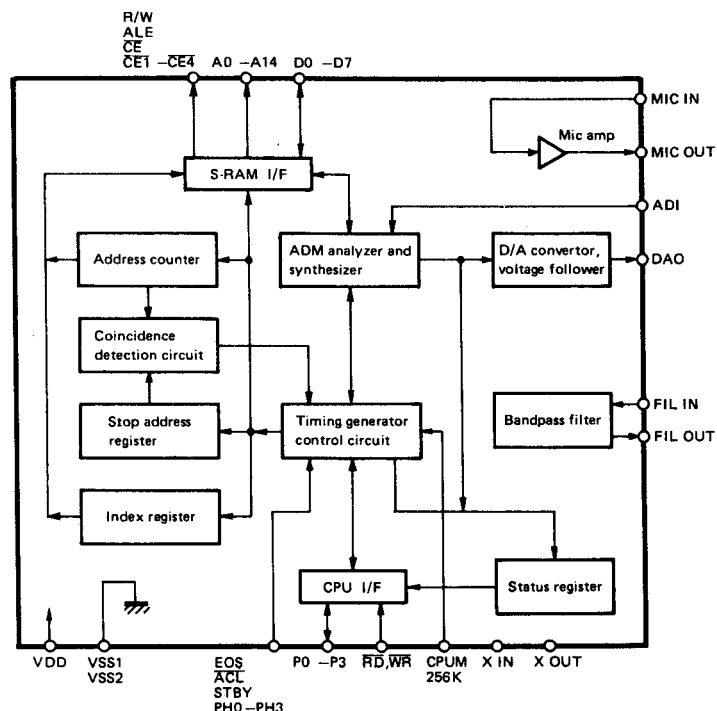
MDR-1 SEMICONDUCTOR DATA

1. Audio recording and playback : TC8830F (IC3)

• Terminal connection diagram



• Block diagram



• Terminal functions

Pin No.	Pin name	I/O	Function	Pin No.	Pin name	I/O	Function
1	FIL OUT	O	Not used.	41	X OUT	O	512kHz oscillation circuit.
2	NC	-	Not connected.	42	256K	I	64K/256K RAM select, "H" when 256K used.
3	TEST	-	Not used.	43	R/W	O	RAM read/write output.
4	D7	I/O	RAM data I/O.	44	ALE	-	Not used.
5	NC	-	Not connected.	45	WR	I	Write pulse input.
6	D6	I/O	RAM data I/O.	46	RD	I	Read pulse input.
7	NC	-	Not connected.	47~50	PH3~PH0	-	Not used.
8	D5	I/O	RAM data I/O.	51~54	P3~P0	I/O	Data bus.
9	NC	-	Not connected.	55	EOS	-	Not used.
10	D4	I/O	RAM data I/O.	56	ACL	I	Reset signal input.
11,12	NC	-	Not connected.	57	CPUM	I	"H" when CPU control enabled.
13~16	D3~D0	I/O	RAM data I/O.	58	Vref	O	Analog circuit reference voltage output.
17~19	A14~A12	O	RAM address output.	59	MIC IN	I	Mic amp. 1 input.
20	Vss1	-	GND.	60	C1	O	Mic amp. 1 output.
21~26	A11~A6	O	RAM address output.	61	Vbd	-	Power supply.
27	Vdd	-	Power supply.	62	Vss2	-	GND.
28~33	A5~A0	O	RAM address output.	63	C2	I	Mic amp. 2 input.
34	CE	-	Not used.	64	MIC OUT	O	Mic amp. 2 output.
35~38	CE1~CE4	O	RAM chip enable.	65	ADI	I	Audio analysis circuit input.
39	STBY	I	Minimum current standby when standby input is "H".	66	DAO	O	D/A convertor output.
40	X IN	I	512kHz oscillation circuit.	67	FIL IN	I	Not used.

MDR-1 (DIGITAL RECORDING UNIT)

* New Parts

Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.

Telle ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
MDR-1						
-			B42-3317-04 B50-8290-00	LABEL INSTRUCTION MANUAL		
			G10-0666-04 G10-0679-04 G13-0913-04	NON-WOVEN FABRIC NON-WOVEN FABRIC FORMED PLATE		
-			H01-8249-03	ITEM CARTON BOX		
-			H03-2772-04	OUTER PACKING CASE		
-			H21-0704-04	PROTECTION SHEET		
-			H25-0029-04	PROTECTION BAG		
-			H25-0710-04	PROTECTION BAG		
			N87-2606-46	BRAZIER HEAD TAPTITE SCREW		
			X42-3010-00	ACCESSORY UNIT		
ACCESSORY UNIT (X42-3010-00)						
C1			CK73FB1H103K	CHIP C 0.010UF K		
C2			CK73FB1H102K	CHIP C 1000PF K		
C3			CK73FF1E154Z	CHIP C 0.15UF Z		
C4 -6			CK73FB1H103K	CHIP C 0.010UF K		
C7			CK73EF1C105Z	CHIP C 1.0UF Z		
C8 -10			CK73FB1H103K	CHIP C 0.010UF K		
C11			CK73FF1E104Z	CHIP C 0.10UF Z		
C12			CK73FB1H103K	CHIP C 0.010UF K		
C13 ,14			CK73FB1H102K	CHIP C 1000PF K		
C15			CK73FF1E104Z	CHIP C 0.10UF Z		
C16			CK73FB1H103K	CHIP C 0.010UF K		
C17			CK73FF1E104Z	CHIP C 0.10UF Z		
C19			CK73FB1H103K	CHIP C 0.010UF K		
C20			CK73FB1H102K	CHIP C 1000PF K		
C21 ,22			CC73FSL1H101J	CHIP C 100PF J		
C23			CK73FB1H103K	CHIP C 0.010UF K		
C24			C92-0010-05	CHIP TAN 6.8UF 6.3WV		
C25			CK73EB1H104K	CHIP C 0.10UF K		
C26			CK73FB1H103K	CHIP C 0.010UF K		
C27			CC73FSL1H101J	CHIP C 100PF J		
C28			CK73FF1E104Z	CHIP C 0.10UF Z		
CN1			E40-5207-05	PIN CONNECTOR		
CN2			E40-5206-05	PIN CONNECTOR		
CN3			E40-5181-05	PIN CONNECTOR		
W1			E31-6005-05	CONNECTING WIRE		
W2			E31-6006-05	CONNECTING WIRE		
W3			E31-6007-05	CONNECTING WIRE		
			F20-0520-04 F20-0521-04	INSULATING BOARD INSULATING BOARD		
X1			L77-1398-05	CRYSTAL RESONATOR 3.579545MHZ		
X2			L78-0050-05	RESONATOR 512KHZ		
R1			RK73FB2A103J	CHIP R 10K J 1/10W		
R2			RK73FB2A392J	CHIP R 3.9K J 1/10W		
R3			RK73FB2A103J	CHIP R 10K J 1/10W		
R4			RK73FB2A105J	CHIP R 1.0M J 1/10W		
R5			RK73FB2A102J	CHIP R 1.0K J 1/10W		

E: Scandinavia & Europe K: USA

P: Canada

U: PX(Far East, Hawaii)

T: England

M: Other Areas

UE: AAFES(Europe)

X: Australia

△ indicates safety critical components.

TKM-507

MDR-1 (DIGITAL RECORDING UNIT)

× New Parts

Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
R6			R92-0670-05	CHIP R 0 0HM		
R7			RK73FB2A223J	CHIP R 22K J 1/10W		
R8			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R9			RK73FB2A105J	CHIP R 1.0M J 1/10W		
R10			R92-0670-05	CHIP R 0 0HM		
R11			RK73FB2A223J	CHIP R 22K J 1/10W		
R12			R92-0670-05	CHIP R 0 0HM		
R13			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R14			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R15			RK73FB2A104J	CHIP R 100K J 1/10W		
R16			RK73FB2A105J	CHIP R 1.0M J 1/10W		
R17			RK73FB2A103J	CHIP R 10K J 1/10W		
R18			RK73FB2A105J	CHIP R 1.0M J 1/10W		
R19			RK73FB2A562J	CHIP R 5.6K J 1/10W		
R20			RK73FB2A104J	CHIP R 100K J 1/10W		
R21			RK73FB2A103J	CHIP R 10K J 1/10W		
R22			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R23			RK73FB2A564J	CHIP R 560K J 1/10W		
R24			RK73FB2A273J	CHIP R 27K J 1/10W		
R25			RK73FB2A683J	CHIP R 68K J 1/10W		
R26			RK73FB2A105J	CHIP R 1.0M J 1/10W		
R27			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R28			RK73FB2A224J	CHIP R 220K J 1/10W		
R29 -31			R92-0670-05	CHIP R 0 0HM		
R32			RK73FB2A220J	CHIP R 22 J 1/10W		
R33			RK73FB2A394J	CHIP R 390K J 1/10W		
D1 ,2			1SS184	DIODE		
IC1			TC4052BF	IC(4CH MPX/DE-MPX)		
IC2			LR4102N	IC		
IC3			TC8830F	IC		
IC4 -7			HM62256LFP-15T	IC		
Q1 -3			2SC2712(BL)	TRANSISTOR		
Q4			DTC144EK	DIGITAL TRANSISTOR		
Q5 ,6			2SC2712(BL)	TRANSISTOR		
			W09-0326-05	LITHIUM BATTERY		

E: Scandinavia & Europe K: USA

P: Canada

U: PX(Far East, Hawaii)

T: England

M: Other Areas

UE: AAFES(Europe)

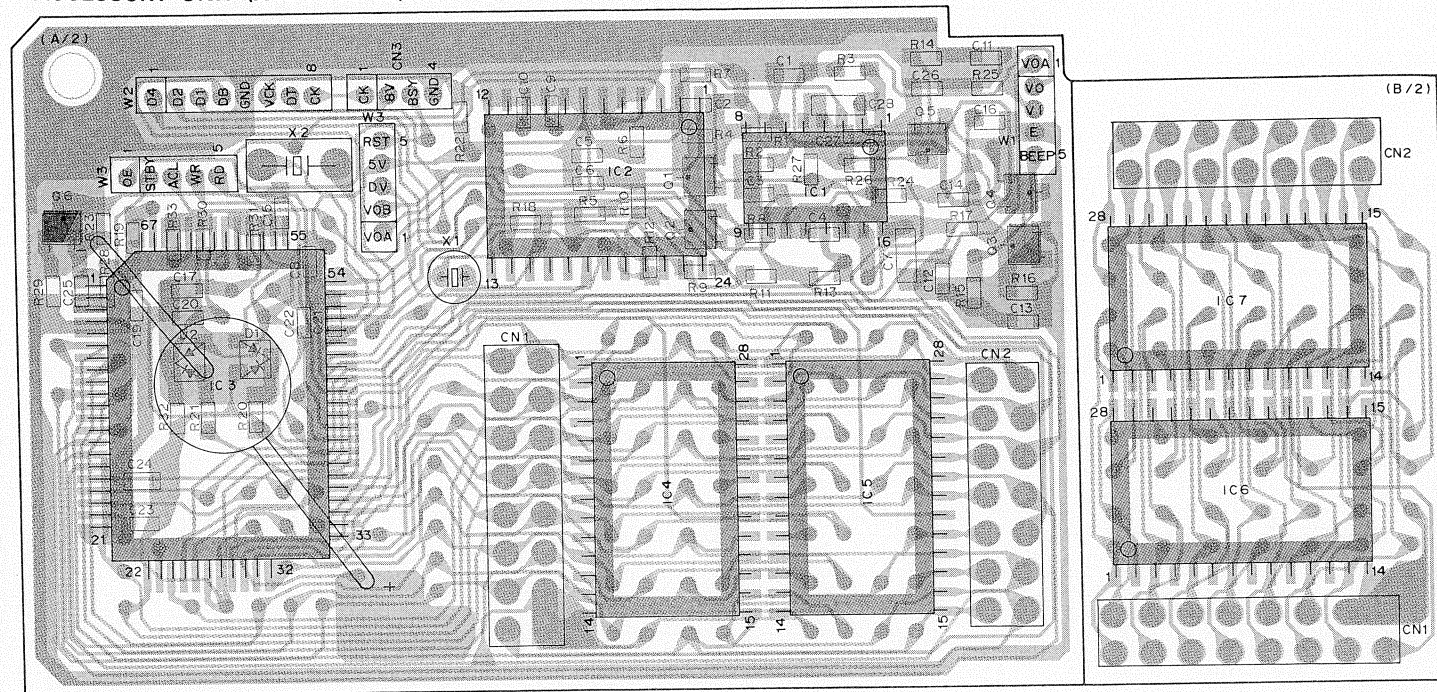
X: Australia

⚠ indicates safety critical components.

MDR-1 (DIGITAL RECORDING UNIT)

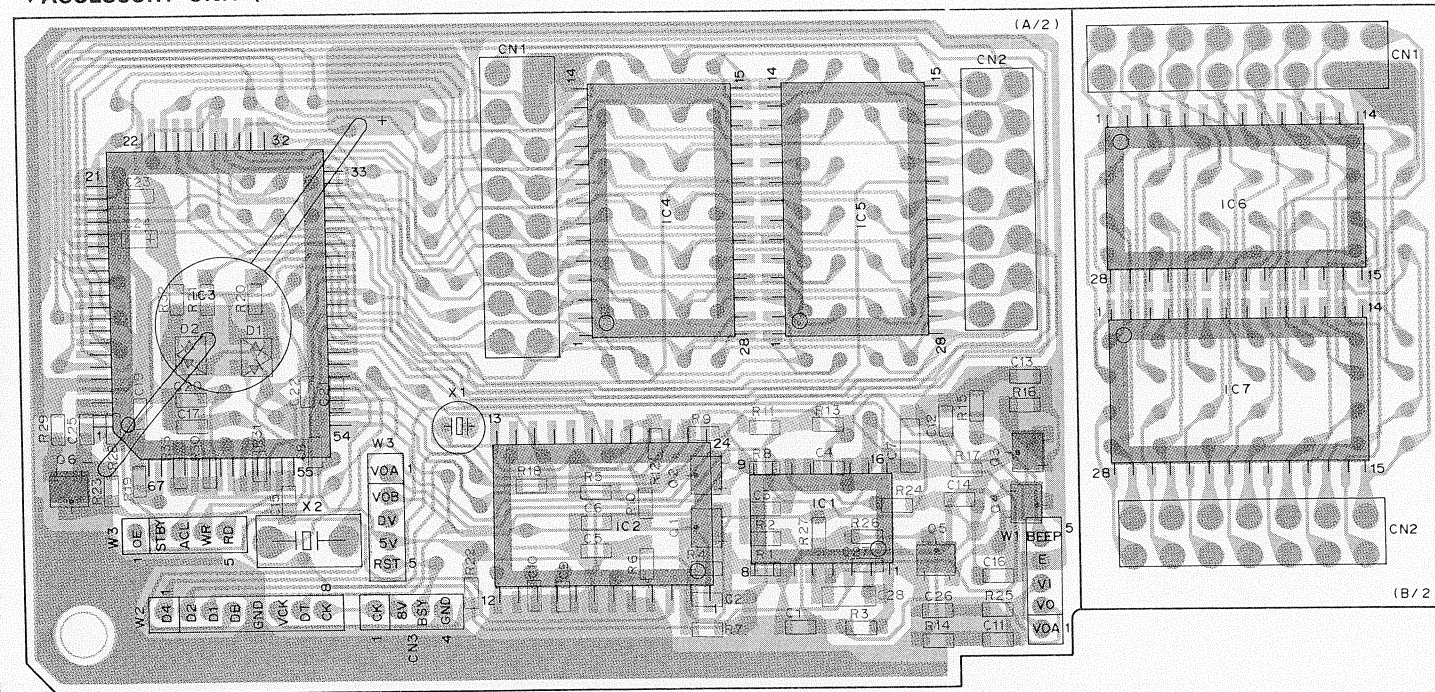
MDR-1 PC BOARD VIEWS

▼ACCESSORY UNIT (X42-3010-00) COMPONENT SIDE VIEW



IC1:TC4052BF IC2:LR4102N IC3:TC8830F IC4~7:HM62256LFP-15T Q5,6:2SC2712(BL) D1,2:ISS184

▼ACCESSORY UNIT (X42-3010-00) FOIL SIDE VIEW



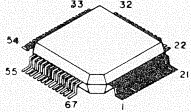
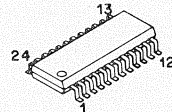
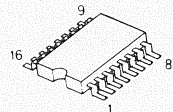
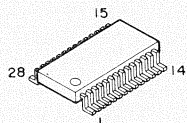
DTC144EK
2SC2712(BL)

HM62256LFP-15T

TC4052BF

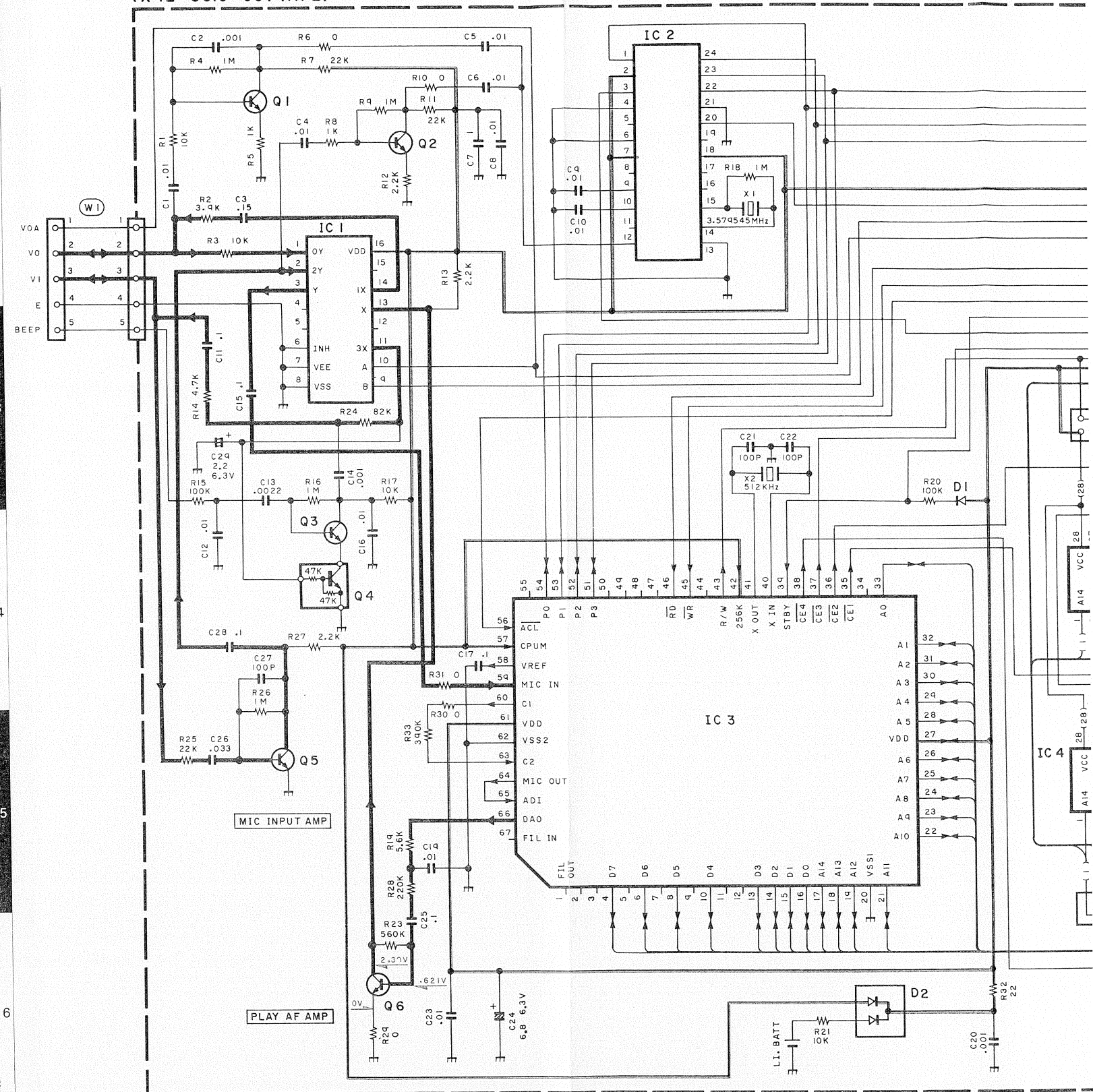
TC8830F

LR4102N



MDR-1 SCHEMATIC DIAGRAM

(X42-3010-00) (A/2)



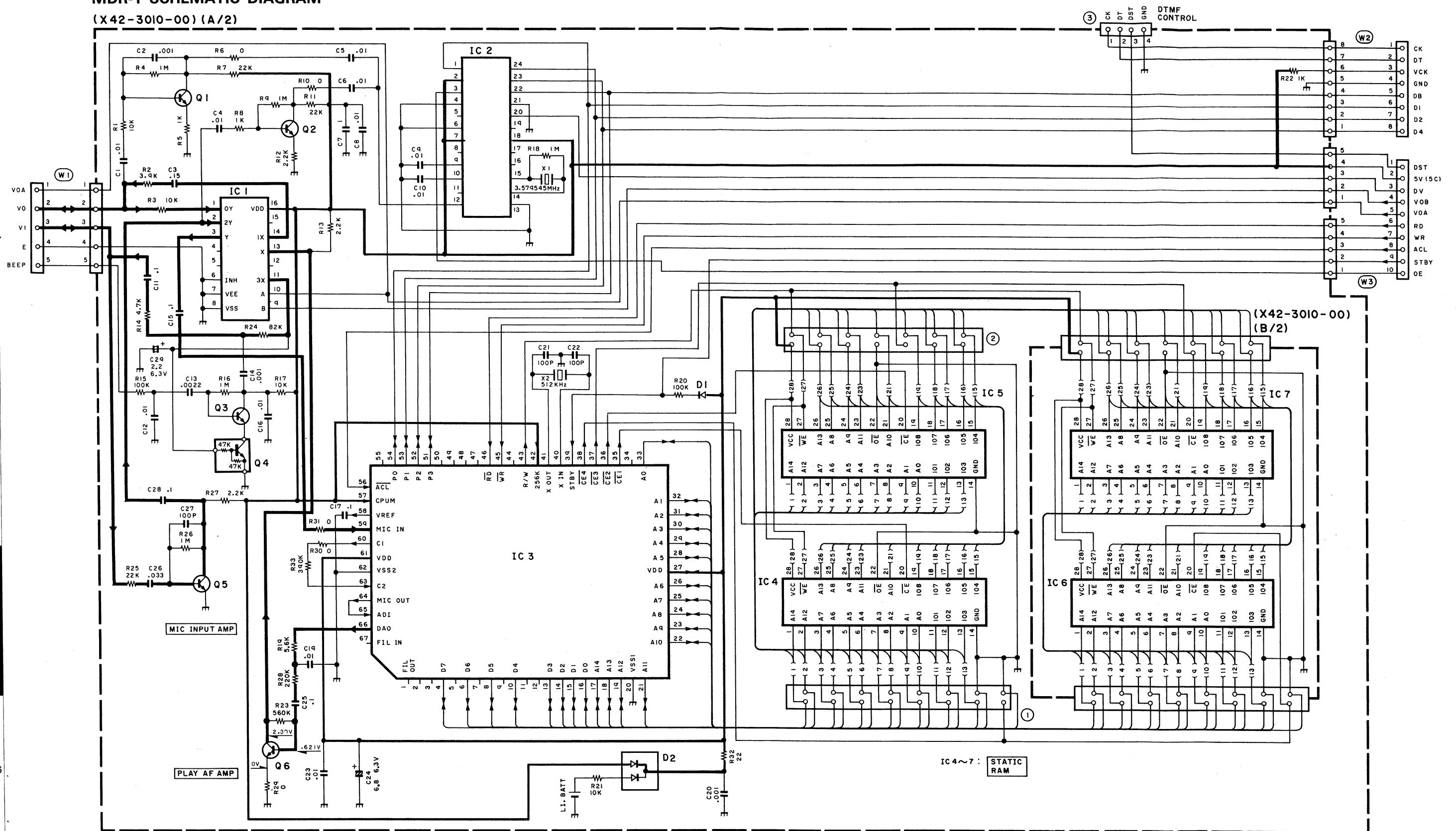
(X42-3010-00) (A/2)

IC1 : TC4052BF
IC2 : LR4102N
IC3 : TC8830F
IC4~7 : HM62256LFP-15T

Q1~3,5,6 : 2SC2712(BL)
Q4 : DTC144EK
D1,2 : ISS184

MDR-1 SCHEMATIC DIAGRAM

(X42-3010-00) (A/2)



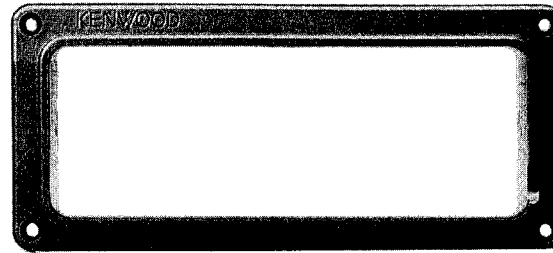
(X42-3010-00) (A/2)

IC 1 : TC4052BF
IC 2 : LR4102N
IC 3 : TC8830F
IC 4~7 : HM62256LFP-15T

Q1~3,5,6 : 2SC2712(BL)
Q4 : DTC144EK
D1, 2 : 1SS184

MFB-2 (FLUSH MOUNTING BRACKET)

MFB-2 (Flush mounting bracket)



SPECIFICATIONS

(GENERAL)

Frequency Range:

Transmit mode 156~157.5 MHz

Receive mode 156~163 MHz

Mode 16KOG3E

Antenna impedance 50 Ω

Operating temperature -20°C~+60°C

Power requirement 13.8 V DC $\pm$ 20%

Grounding Floating

Current drain:

HI Less than 6.0 A

LOW Less than 1.7 A

Frequency stability $\pm$ 5 ppmDimensions W 232 mm $\times$ D 187 mm $\times$ H 82 mm

Weight 2.3 kg

(TRANSMITTER)

(measurements made per EIA standard RS-152-B)

Output Power:

HI 25 W

LOW 1 W

Modulation Reactance

Spurious radiation:

HI Less than -70 dB

LOW Less than -56 dB

Max. frequency deviation $\pm$ 5 kHz

Audio Distortion (at 60% modulation) Less than 3%

Microphone Impedance 600 Ω

(RECEIVER)

(measurements made per EIA standard RS-204-C)

Circuitry Double conversion superheterodyne

Intermediate frequency:

1st 21.6 MHz

2nd 455 kHz

Sensitivity (12 dB SINAD) Less than 0.3 μ V

Selectivity 70 dB/25 kHz

Spurious response Better than 75 dB

Squelch Sensitivity Less than 0.15 μ V

Intermodulation Better than 70 dB

Output (10% distortion):

Receive mode 5 W

Hailer mode 10 W

External speaker impedance 4 Ω

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COMMUNICATIONS & TEST EQUIPMENT GROUP

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4E, Woodcock Place, Lane Cove, N.S.W. 2066, Australia

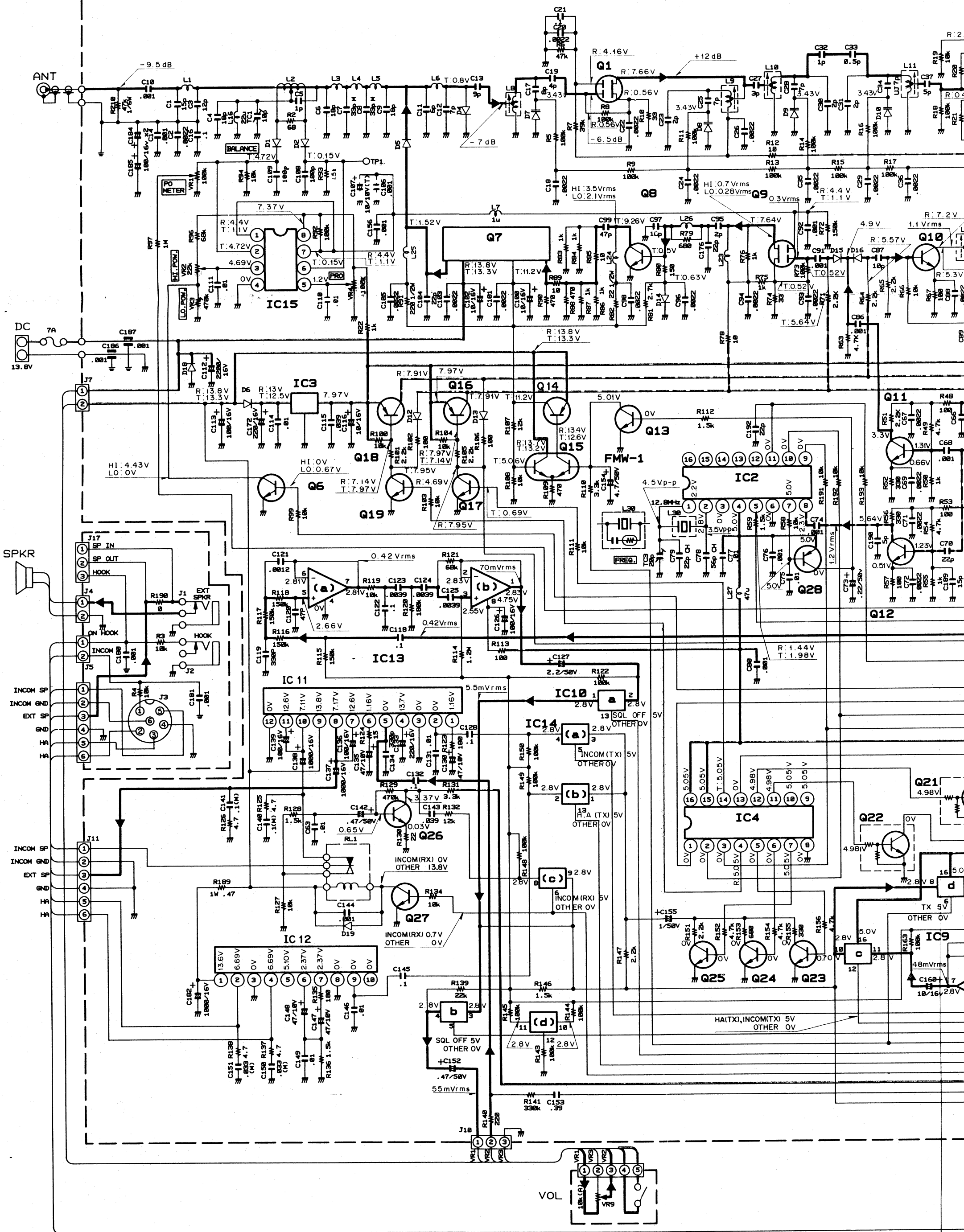
KENWOOD & LEE ELECTRONICS, LTD.

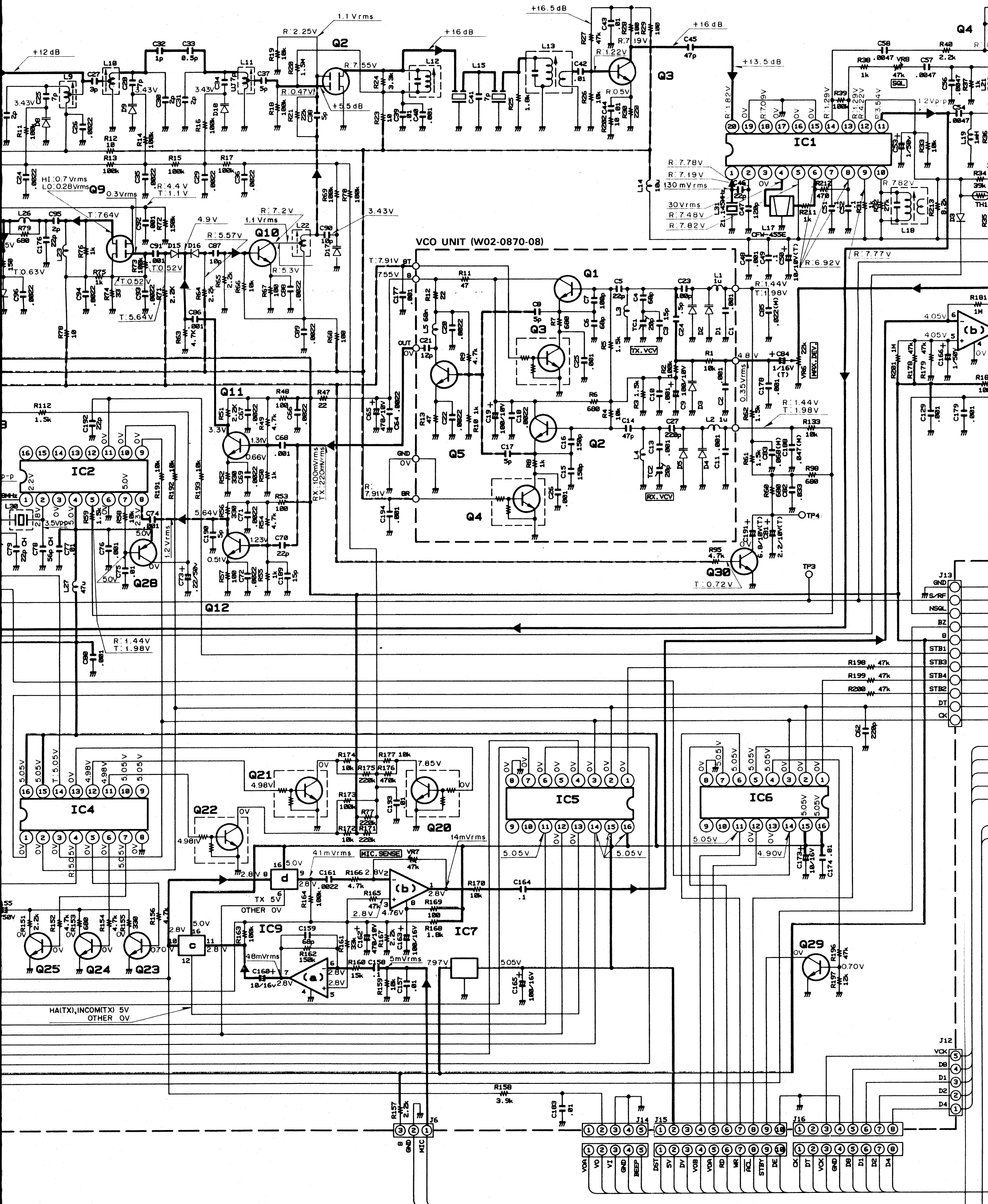
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TX-RX UNIT (W02-0869-08)





SCHEMATIC DIAGRAM TKM-507

